

# The essential guide of Automation

helping you easily  
select the right product

2008



**Schneider**  
Electric

# Automation

## Zelio

### Relays and smart relays



#### Zelio relay range

Zelio Relay plug-in relays, Zelio Control control and measurement relays, Zelio Count counters, Zelio Time timing relays: These ranges offer **compactness** and **simplicity**.

#### Zelio Logic smart relays

Designed for management of simple automation systems comprising 10 to 40 I/O. Compact or modular, Zelio Logic offers **flexibility** and **simplicity**.

## Modicon

### Automation platforms



**Modicon TSX Micro**, ideal for compact machine builders. At the heart of the machine, TSX Micro offers **compactness**, **modularity** and **integration** benefits.

- CANopen machine bus connection
- Low cost Ethernet connection
- Doubling of memory capacity



**Modicon M340**, is designed for complex machine applications and infrastructures control. **Robust**, **powerful** and **compact** it meets your requirements for automation of industrial processes.

- CANopen machine and installation bus
- Ethernet TCP/IP network - Transparent Ready
- Modbus serial link and character mode



**Modicon Premium**, ideal for manufacturing and infrastructure applications. Outstanding **flexibility** for distributed architectures and **integration** of advanced automation system functions.

- New high performance processors
- CANopen machine bus connection, from entry level



**Modicon Quantum**, ideal for process applications. **High level of performance** for process control, process safety and architecture availability.

- New high performance processors
- Onboard Ethernet
- Memory expansion option using PCMCIA
- Safety new offer



# Contents

## Twido

Programmable controllers



**Twido**, ideal for simple installations and small machines: standard applications comprising 10 to 100 I/O (max. 252 I/O). Compact or modular, Twido offers *flexibility* and *simplicity*.

### Relays

- **Zelio Relay** - Plug-in relays ..... 2 to 3
- **Zelio analog** - Analog interface ..... 4 to 5
- **Zelio Control** - Control and measurement relays ..... 6 to 9
- **Zelio Count** - Counters ..... 10 to 11
- **Zelio Time** - Timing relays ..... 12 to 13
- **Zelio Logic** - Smart relays ..... 14 to 15

### Programmable controllers, Automation platforms

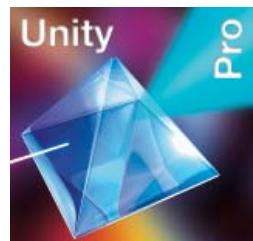
- **Twido** - Programmable controllers ..... 16 to 19
- **Modicon TSX Micro** - Automation platforms ..... 20 to 25
- **Modicon M340** - Automation platforms ..... 26 to 33
- **Modicon Premium** - Automation platforms ..... 34 to 41
- **Modicon Quantum** - Automation platforms ..... 42 to 49
- **Unity** - Software ..... 50 to 51
- **PL7, Concept, ProWORX 32** - Software ..... 52 to 53

### Modicon M340

The ideal solution for machine builders



*Choosing Modicon M340 gives you the advantage of all the services of the Unity software offer, from the design through to the implementation of your application.*





Type of relay	Interface relays RSB			Miniature relays RXM				
<b>Contact characteristics</b>								
Thermal current $I_{th}$ in A (temperature $\leq 55^\circ\text{C}$ )	8	12	16	12	10	6	3	
Number of contacts	2 "C/O"	1 "C/O"	1 "C/O"	2 "C/O"	3 "C/O"	4 "C/O"	4 "C/O"	
Contact material	AgNi	AgNi	AgNi	AgNi	AgNi	AgNi	AgAu	
Switching voltage, min. / max.	5 / 250 VAC/DC			12 / 250 VAC/DC				
Switching capacity, min. / max. (mA / VA)	5 / 2000	5 / 3000	5 / 4000	10 / 3000	10 / 2500	10 / 1500	2 / 1500	
<b>Coil characteristics</b>								
Average consumption, inrush,	0.75 VA / 0.45 W			1.2 VA / 0.9 W				
Permissible voltage variation	0.8/0.85...1.1 Un (50/60Hz or =)			0.8...1.1 Un (50/60Hz or =)				
References	(1)	(1)	(1)	(2)	(2)	(2)		
Coil supply voltage on DC	6 VDC	RSB2A080RD	RSB1A120RD	RSB1A160RD	—	—	—	—
	12 VDC	RSB2A080JD	RSB1A120JD	RSB1A160JD	RXM2AB2JD	RXM3AB2JD	RXM4AB2JD	RXM4GB2JD
	24 VDC	RSB2A080BD	RSB1A120BD	RSB1A160BD	RXM2AB2BD	RXM3AB2BD	RXM4AB2BD	RXM4GB2BD
	48 VDC	RSB2A080ED	RSB1A120ED	RSB1A160ED	RXM2AB2ED	RXM3AB2ED	RXM4AB2ED	RXM4GB2ED
	60 VDC	RSB2A080ND	RSB1A120ND	RSB1A160ND	—	—	—	—
Coil supply voltage on AC	110 VDC	RSB2A080FD	RSB1A120FD	RSB1A160FD	RXM2AB2FD	RXM3AB2ED	RXM4AB2ED	RXM4GB2ED
	24 VAC	RSB2A080B7	RSB1A120B7	RSB1A160B7	RXM2AB2B7	RXM3AB2B7	RXM4AB2B7	RXM4GB2B7
	48 VAC	RSB2A080E7	RSB1A120E7	RSB1A160E7	RXM2AB2E7	RXM3AB2E7	RXM4AB2E7	RXM4GB2E7
	120 VAC	RSB2A080F7	RSB1A120F7	RSB1A160F7	RXM2AB2F7	RXM3AB2F7	RXM4AB2F7	RXM4GB2F7
	220 VAC	RSB2A080M7	RSB1A120M7	RSB1A160M7	—	—	—	—
	230 VAC	RSB2A080P7	RSB1A120P7	RSB1A160P7	RXM2AB2P7	RXM3AB2P7	RXM4AB2P7	RXM4GB2P7
	240 VAC	RSB2A080U7	RSB1A120U7	RSB1A160U7	—	—	—	RXM4GB2U7

## Sockets for relays

Type of socket	For interface relays RSB			For miniature relays RXM					
<b>Mixed input/output type sockets with location for protection module</b>									
	—	—	—	RXZE2M114(5)	—	RXZE2M114	RXZE2M114		
	—	—	—	RXZE2M114M(5)	—	RXZE2M114M	RXZE2M114M		
<b>Separate input/output type sockets with location for protection module</b>									
	RSZE1S48M	RSZE1S35M	RSZE1S48M(3)	RXZE2S108M	RXZE2S111M	RXZE2S114M	RXZE2S114M		
<b>Protection modules</b>									
Diode	6...230 VDC	RZM040W		RXM040W					
RC circuit	24...60 VAC	RZM041BN7		RXM041BN7					
	110...240 VAC	RZM041FU7		RXM041FU7					
Varistor	6...24 VDC or AC	RZM021RB (6)		RXM021RB					
	24...60 VDC or AC	RZM021BN (6)		RXM021BN					
	110...230 VDC or AC	RZM021FP (6)		RXM021FP					
	24 VDC or AC	—		—					
	240 VDC or AC	—		—					
Multifunction timer module	24...230 VDC or AC	—		—					
<b>Accessories</b>									
Plastic maintaining clamp	RSZR215			RXZR335					
Metal maintaining clamp	—			RXZ400					
Label for socket	RSZL300			RXZL420 (except RXZE2M114)					
Bus jumper	2 poles	—			RXZS2				
DIN rail adapter	—	—			RXZE2DA				
Panel mounting adapter	—	—			RXZE2FA				

(1) References for relays without socket, for relays with socket, add the letter **S** to the end of the selected reference. (Example: RSB2A080B7 becomes RSB2A080B7S).

(2) References for relays with LED, for relays without LED, replace the number 1 in the reference by **2**. (Example: RXM2AB2JD becomes RXM2AB1JD)

(3) To use RSB 1A160 **••** relay with socket, terminals must be interconnected

## Universal and power relays



Universal relays RUM					Power relays RPM					RPF	
Cylindrics				Faston							
10	10	3	10	10	15	15	15	15	30 (4)	30 (4)	
2 "C/O"	3 "C/O"	3 "C/O"	2 "C/O"	3 "C/O"	1 "C/O"	2 "C/O"	3 "C/O"	4 "C/O"	2 "N/O"	2 "C/O"	
AgNi	AgNi	AgAu	AgNi	AgNi	AgNi	AgNi	AgNi	AgNi	AgSnO <sub>2</sub>	AgSnO <sub>2</sub>	
12 / 250 VAC/DC					12 / 250 VAC/DC				12 / 250 VAC/DC		
10 / 2500	10 / 2500	3 / 750	10 / 2500	10 / 2500	100 / 3750	100 / 3750	100 / 3750	100 / 3750	100 / 7200	100 / 7200	
2...3 VA / 1.4 W					0.9 VA / 0.7 W	1.2 VA / 0.9 W	1.5 VA / 1.7 W	1.5 VA / 2 W	4 VA / 1.7 W		
(2)	(2)	—	(2)	(2)	(2)	(2)	(2)	(2)	—	—	
—	—	—	—	—	—	—	—	—	—	—	
RUMC2AB2JD	RUMC3AB2JD	—	RUMF2AB2JD	RUMF3AB2JD	RPM12JD	RPM22JD	RPM32JD	RPM42JD	RPF2AJD	RPF2BJD	
RUMC2AB2BD	RUMC3AB2BD	RUMC3GB2BD	RUMF2AB2BD	RUMF3AB2BD	RPM12BD	RPM22BD	RPM32BD	RPM42BD	RPF2ABD	RPF2BBD	
RUMC2AB2ED	RUMC3AB2ED	RUMC3GB2ED	RUMF2AB2ED	RUMF3AB2ED	RPM12ED	RPM22ED	RPM32ED	RPM42ED	—	—	
—	—	—	—	—	—	—	—	—	—	—	
RUMC2AB2FD	RUMC3AB2FD	—	RUMF2AB2FD	RUMF3AB2FD	RPM12FD	RPM22FD	RPM32FD	RPM42FD	RPF2AFD	RPF2BFD	
RUMC2AB2B7	RUMC3AB2B7	RUMC3GB2B7	RUMF2AB2B7	RUMF3AB2B7	RPM12B7	RPM22B7	RPM32B7	RPM42B7	RPF2AB7	RPF2BB7	
RUMC2AB2E7	RUMC3AB2E7	RUMC3GB2E7	RUMF2AB2E7	RUMF3AB2E7	RPM12E7	RPM22E7	RPM32E7	RPM42E7	—	—	
RUMC2AB2F7	RUMC3AB2F7	RUMC3GB2F7	RUMF2AB2F7	RUMF3AB2F7	RPM12F7	RPM22F7	RPM32F7	RPM42F7	RPF2AF7	RPF2BF7	
—	—	—	—	—	—	—	—	—	—	—	
RUMC2AB2P7	RUMC3AB2P7	RUMC3GB2P7	RUMF2AB2P7	RUMF3AB2P7	RPM12P7	RPM22P7	RPM32P7	RPM42P7	RPF2AP7	RPF2BP7	
—	—	—	—	—	—	—	—	—	—	—	

For universal relays RUM					For power relays RPM				For power relays RPF		
RUZC2M	RUZC3M	RUZC3M	—	—	RPZF1	RPZF2	RPZF3	RPZF4	—		
—	—	—	—	—	—	—	—	—	—		
RUZSC2M	RUZSC3M	RUZSC3M	RUZSF3M	RUZSF3M	—	—	—	—	—		
RUW240BD					1 and 2 poles				3 and 4 poles		
RUW241P7					RXM040W				RUW240BD		
RUW241P7					RXM041BN7				—		
RUW241P7					RXM041FU7				RUW241P7		
RUW241P7					RXM021RB				—		
RUW241P7					RXM021BN				—		
RUW241P7					RXM021FP				—		
RUW242B7					RUW242B7				—		
RUW242P7					RUW242P7				—		
RUW101MW					RUW101MW				—		
RUZC200					RPZF1 (for 1 pole relays)				—		
RUZL420					—				—		
RUZS2					—				—		
RUZS2					RPZ1DA	RXZE2DA	RPZ3DA	RPZ4DA	—		
RUZS2					RPZ1FA	RXZE2FA	RPZ3FA	RPZ4FA	—		

(4) 30A with 13 mm space between relays; 25 A when relay mounting side by side

(5) Max 10 A operating

(6) With LED



Type	Thermocouple				
Temperature range	0...150 °C 32...302 °F	0...300 °C 32...572 °F	0...600 °C 32...1112 °F	0...600 °C 32...1112 °F	0...1200 °C 32...2192 °F
Output range	0...10 V / 0...20 mA - 4...20 mA Switchable				
Dimensions H x W x D	80 x 22,5 x 80 mm				
Voltage	24 VDC - Non isolated				
References	RMTJ40BD	RMTJ60BD	RMTJ80BD	RMTK80BD	RMTK90BD

## Universal PT 100



Type	PT 100				
Temperature range	-40...40 °C -40...104 °F	-100...100 °C -148...212 °F	0...100 °C 32...212 °F	0...250 °C 32...482 °F	0...500 °C 32...932 °F
Output range	0...10 V / 0...20 mA - 4...20 mA Switchable				
Dimensions H x W x D	80 x 22,5 x 80 mm				
Voltage	24 VDC - Non isolated				
References	RMPT10BD	RMPT20BD	RMPT30BD	RMPT50BD	RMPT70BD

## Optimum PT 100



Type	PT 100				
Temperature range	-40...40 °C -40...104 °F	-100...100 °C -148...212 °F	0...100 °C 32...212 °F	0...250 °C 32...482 °F	0...500 °C 32...932 °F
Output range	0...10 V				
Dimensions H x W x D	80 x 22,5 x 80 mm				
Voltage	24 VDC - Non isolated				
References	RMPT13BD	RMPT23BD	RMPT33BD	RMPT53BD	RMPT73BD

## Universal Analog Converter



Type	Analog Converter			
Input range	0...10 V or 4...20 mA	0...10 V / -10...+10 V 0...20 mA 4...20 mA	0...50 V / 0...300 V 0...500 V	0...1,5 A / 0...5 A 0...15 A
Output range	0...10 V or 4...20 mA	0...10 V / -10...+10 V 0...20 mA 4...20 mA Switchable	0...10 V 0...20 mA 4...20 mA Switchable	0...10 V or 0...20 mA ou 4...20 mA
Dimensions H x W x D	80 x 22,5 x 80 mm			80 x 45 x 80 mm
Voltage	24 VDC - Non isolated	24 VDC - Isolated	24 VDC - Isolated	24 VDC - Isolated
References	RMCN22BD	RMCL55BD	RMCV60BD	RMCA61BD



Function	presence of phase +phase sequence		+phase sequence, +regeneration +phase unbalance, +under/over voltage	
Monitoring voltage range	208...480 VAC	208...440 VAC	208...480 VAC	220 ... 440 VAC
Outputs	1 C/O	2 C/O	1 C/O	2 C/O
References	RM17TG00	RM17TG20	RM17TE00	RM35TF30



Function	presence of phase +under/over voltage		+presence of neutral +under/over voltage
Monitoring voltage range	208...480 VAC	220...480 VAC	120...277 VAC (phase-neutral)
Outputs	1 C/O	2 C/O	2 C/O
References	RM17UB310	RM35UB330	RM35UB3N30

## Level / Speed monitoring relays



Function	Conductive liquid level monitoring	Non-conductive material level monitoring	Over/under Speed monitoring
Power supply	24...240 VAC/DC		
Monitoring range	0,25...5 KΩ 5...100 KΩ 0,05...1 MΩ	Input of sensor : Contact / PNP / NPN	Interval between pulses: 0,05...0,5 s, 0,1...1 s, 0,5...5 s 1...10 s, 0,1...1 mn, 0,5...5 mn 1...10 mn
Output	2 C/O	1 C/O	1 C/O
Reference	RM35LM33MW	RM35LV14MW	RM35S0MW

## Current / Voltage /Frequency monitoring relays



Function	Voltage Monitoring Under or Over Voltage		
Power Supply	24...240 VAC/DC 50/60Hz		
Monitoring range	0.05...0.5 V 0.3...3 V 0.5...5 V	1...10 V 5...50 V 10...100 V	15...150 V 30...300 V 60...600 V
Outputs	2 C/O	2 C/O	2 C/O
References	RM35UA11MW	RM35UA12MW	RM35UA13MW



Function	Voltage Monitoring Under or Over Voltage			Under and Over Voltage	
Power Supply	self powered			self powered	
Monitoring range	9...15 VDC	20...80 VAC/DC	65...260 VAC/DC	20...80 VAC/DC	65...260 VAC/DC
Outputs	1 C/O	1 C/O	1 C/O	1 C/O	1 C/O
References	RM17UAS14	RM17UAS16	RM17UAS15	RM17UBE16	RM17UBE15



Function	Current Monitoring over current	over or under current		Frequency Monitoring Over or under frequency
Power supply	24...240 VAC/DC	24...240 VAC/DC 50/60 Hz		120...277 VAC 50/60 Hz
Monitoring range	2...20 A built-in CT	2...20 mA 10...100 mA 50...500 mA	0.15...1.5 A 0.5...5 A 1.5...15 A	50 Hz ± 10 Hz or 60 Hz ± 10Hz
Output	1 C/O	2 C/O	2 C/O	2 C/O
Reference	RM17JC00MW	RM35JA31MW	RM35JA32MW	RM35HZ21FM



<b>Function</b>	Lift motor room temperature monitoring		
	+phase presence +phase sequence		
<b>Power supply</b>	24...240 VAC/DC 50/60Hz		
<b>Monitoring range</b>	input PT100 3 wires Under -1...+11 °C Over +34...+46 °C		
<b>Output</b>	1 C/O	2 NO	2 C/O
<b>Reference</b>	RM35ATL0MW	RM35ATR5MW	RM35ATW5MW



<b>Function</b>	<b>Pump protection</b> <b>Current monitor</b> <b>+3 phase monitor</b>		<b>Motor Protection</b> <b>Winding Temperature monitor</b> <b>+3 phase monitor</b>
<b>Power supply</b>	self powered (single phase :230 VAC 50/60 Hz)	24...240 VAC/DC	
<b>Monitoring range</b>	Current: 0.1...10 A Voltage (three phase): 208...480 VAC 50/60Hz	Winding Temperature: PTC sensor Three phase voltage: 208...480 VAC 50/60Hz	
<b>Output</b>	1 C/O	2 NO	2 NO
<b>Reference</b>	RM35BA10	RM35TM50MW	RM35TM250MW

## Control relays for 3-phase supplies



Function	Rotational direction and presence of phases				+ Asymmetry	
		+ Undervoltage	+ Over and undervoltage			
Adjustable time delay	without	without	0.1...10 s	0.1...10 s	fixed, 0.5 s	0.1...10 s
Supply voltage	220...440V	380...440V	400V	380...440V	380...440V	380...440V
Output	2 C/O	2 C/O	2 C/O	2 C/O	1 C/O	2 C/O
References	RM4TG20	RM4TU02	RM4TR34 (1)	RM4TR32 (2)	RM4TA02	RM4TA32

(1) Relay with fixed voltage thresholds.

(2) Relay with adjustable voltage thresholds.

## Current and voltage measurement relays

(3) Basic reference. To be completed with the letters indicating the required voltage, as shown below:

Voltage	VAC, 50/60 Hz	VDC
24...240 V	MW	MW
110...130 V	F	—
220...240 V	M	—
380...415 V	Q	—

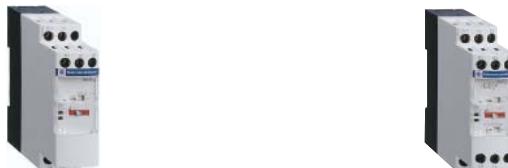


Function	Detection of over and underright		over and underright			
	over and underright	over and underright	over and underright	over and underright	over and underright	over and underright
Measuring range	3...30 mA	0.3...1.5 A	0.05 ...0.5 V	1...10 V	30...300 V	180...270 V
	10...100 mA	1...5 A	0.3 ...3 V	5...50 V	50...500 V	
	0.1...1 A	3...15 A	0.5...5 V	10...100 V		
Adjustable time delay	0.05...30 s	0.05...30 s	0.05...30 s	0.05...30 s	0.05...30 s	0.1...10 s
Output	2 C/O	2 C/O	2 C/O	2 C/O	2 C/O	2 C/O
References	RM4JA31• (3)	RM4JA32• (3)	RM4UA31• (3)	RM4UA32• (3)	RM4UA33• (3)	RM4UB35

(4) Basic reference. To be completed with the letters indicating the required voltage, as shown below:

Voltage	RM4-LG01	RM4-LA32	
	VAC, 50/60 Hz	VAC, 50/60 Hz	VDC
24 V	B	B	—
24...240 V	—	MW	MW
110...130 V	F	F	—
220...240 V	M	M	—
380...415 V	Q	Q	—

## Liquid level control relays



Control relays	Empty or fill		
	5 ... 100 kΩ	0.25 ... 5 kΩ	2.5 ... 50 kΩ
Sensitivity scale	5 ... 100 kΩ	0.25 ... 5 kΩ	2.5 ... 50 kΩ
Time delay	without	adjustable, 0.1 to 10 s	
Output	1 C/O	2 C/O	
References	RM4LG01• (4)	RM4LA32• (4)	

Liquid level control probe type	Measuring electrode and reference electrode	1 simple stainless steel electrode in PVC protective casing
Mounting	suspended	suspended
Maximum operating temperature	100°C	100°C
References	LA9RM201	RM79696043



Display	Mechanical				LCD
Supply voltage	24 VDC				Battery
Number of digits displayed	5	6	6	8	8
Counting frequency	20 Hz	10 Hz	25 Hz	25 Hz	7.5 kHz
Type of zero reset	Manual	Without	Manual	Without	Manual (1)
Front face dimensions, W x H	41.5 x 31 mm	30 x 20 mm	60 x 50 mm	60 x 50 mm	48 x 24 mm
References	XBKT50000U10M	XBKT60000U00M	XBKT60000U10M	XBKT80000U00M	XBKT81030U33E

(1) With electrical interlocking.

## Hour counters



Display	Mechanical		LCD
Supply voltage	24 VAC	230 VAC	Battery
Number of digits / display	7 (99,999.99 h)	7 (99,999.99 h)	8 (999,999.99 h)
Supply frequency	50 Hz	50 Hz	Mode: 1/100 hour
Type of zero reset	Without	Without	Manual (1)
Front face dimensions, W x H	48 x 48 mm	48 x 48 mm	48 x 24 mm
References	XBKH70000004M	XBKH70000002M	XBKH81000033E



Display		LCD		LED			
Number of digits displayed		6					
Counting frequency		5 kHz					
Type of reset		Manual, electric and automatic					
Front face dimensions, W x H		48 x 48 mm					
Preselection number		1	2	1	2		
References	Supply voltage	24 VDC	XBKP61130G30E	XBKP61230G30E	XBKP62130G30E		
		115 VAC	XBKP61130G31E	XBKP61230G31E	—		
		230 VAC	XBKP61130G32E	XBKP61230G32E	XBKP62230G32E		



Type of modular timer width 17.5 mm, relay output	On-delay	Multifunction		
External control	no	–	–	–
Supply voltage	24 VDC - 24 ...240 VAC	24 VDC - 24 ...240 VAC	–	12 ... 240VAC/DC
Timing range	0.1 s...100 h	0.1 s...100 h	0.1 s...10 h	0.1 s...100 h
Output	1 C/O	1 C/O	1 C/O	1 C/O
References	RE11RAMU	RE11RMMU (1)	RE11RMEMU (2)	RE11RMMW (1)

(1) Multifunction: On-delay, Off-delay, Totaliser, Symmetrical flashing, Chronometer, Pulse on energisation, Pulse output, Timing after closing/opening of control contact.

(2) Multifunction: On-delay, Off-delay, Totaliser, Symmetrical flashing, Chronometer, Pulse on energisation.



Type of modular timer width 17.5 mm, relay output	Asymmetrical flashing	Pulse on energisation	Off delay	Timing on impulse
External control	–	–	–	–
Supply voltage	24 VDC - 24...240 VAC	24 VDC - 24...240 VAC	24 VDC - 24...240 VAC	24 VDC - 24...240 VAC
Timing range	0.1 s...100 h	0.1 s...100 h	0.1 s...100 h	0.1 s...100 h
Output	1 C/O	1 C/O	1 C/O	1 C/O
References	RE11RLMU	RE11RHMU	RE11RCMU	RE11RBMU



Type of modular timer width 17.5 mm, solid-state output	On-delay	Off-delay	Multifunction (3)
Supply voltage	24...240 VAC/DC	24...240 VAC	24...240 VAC
Timing range	0.1 s...100 h	0.1 s...100 h	0.1 s...100 h
Output	solid-state	solid-state	solid-state
References	RE11LAMW	RE11LCBM	RE11LMBM

(3) Multifunction: On-delay, Off-delay, Totaliser, Symmetrical flashing, Chronometer, Pulse on energisation, Pulse output, Timing after closing/opening of control contact.



Panel-mounted relays	Timer on-delay	Asymmetrical flasher	Multifunction (4)	Multifunction (5)
Power supply	24...240 VAC/DC	–	–	–
Time range	0,02 s...300 h	–	–	–
Output	2 relay 5 A	–	–	–
Reference	RE48ATM12MW	RE48ACV12MW	RE48AMH13MW (6)	RE48AML12MW
	Back panel mounting socket	RUZC2M	RUZC3M	RUZC2M
	Front panel mounting socket	RE48ASOC8SOLD	RE48ASOC11SOLD	RE48ASOC8SOLD

(4) Timer on-delay / pulse on energization

(5) Timer on-delay / calibrator / timer off-delay / symmetrical flasher

(6) 1 selectable in instantaneous

## Industrial timers



Type of single function relay width 22.5 mm, relay output	On-delay		Off-delay		
External control	no	yes	no	yes	yes
Supply voltage	24 VAC/DC 110...240 VAC	24 VAC/DC 42...48 VAC/DC 110...240 VAC	24...240 VAC/DC	24 VAC/DC 42...48 VAC/DC 110...240 VAC	24 VAC/DC 42...48 VAC/DC 110...240 VAC
Timing range	0.05 s...300 h	0.05 s...300 h	0.05 s...10 min	0.05 s...300 h	0.05 s...300 h
Output	1 C/O	2 C/O (1)	1 C/O	2 C/O (1)	1 C/O
References	RE7TL11BU	RE7TP13BU	RE7RB11MW	RE7RL13BU	RE7RM11BU

(1) 1 selectable in instantaneous mode.



Type of relay width 22.5 mm, relay output	Single function		Multifunction	
	Asymmetrical flashing	Pulse on energisation	6 functions (2)	8 functions (3)
External control	yes	no	–	–
Supply voltage	24 VAC/DC 42...48 VAC/DC 110...240 VAC	24 VAC/DC 110...240 VAC	24 VAC/DC 42...48 VAC/DC 110...240 VAC	24 VAC/DC 110...240 VAC
Timing range	0.05 s...300 h	0.05 s...300 h	0.05 s...300 h	0.05 s...300 h
Output	1 C/O	1 C/O	1 C/O	2 C/O (4)
References	RE7CV11BU	RE7PE11BU	RE7ML11BU	RE7MY13BU

(2) RE7ML11BU functions: On-delay, Off-delay, Pulse on energisation with start on energisation, Pulse on energisation with start on opening of remote control contact, Flashing with start during the OFF period, Flashing with start during the ON period.

(3) REMY13BU functions: On-delay, Off-delay, Pulse on energisation with start on energisation, Pulse on energisation with start on opening of remote control contact, Flashing with start during the OFF period, Flashing with start during the ON period, Star-delta starting with double On-delay timing, Star-delta starting with contact for switching to star connection.

(4) 1 selectable in instantaneous mode

## Miniature plug-in relays, relay output



Functions			
Timing ranges	7 switchable ranges	0.1...1 s - 1 s...10 s - 0.1 min...1 min - 1 min...10 min - 0.1 h...1 h - 1 h...10 h - 10 h...100 h	
Relay output		4 timed C/O contacts	2 timed C/O contacts
Rated current		3 AC 5 A	AC 5 A
Voltages	24 VDC	RE XL4TMBD	RE XL2TMBD
	24 VAC 50/60 Hz	RE XL4TMB7	RE XL2TMB7
	120 VAC 50/60 Hz	RE XL4TMF7	RE XL2TMF7
	230 VAC 50/60 Hz	RE XL4TMP7	RE XL2TMP7
Socket with mixed contact terminals	With screw clamp	RXZE2M114	RXZE2M114
	With connector	RXZE2M114M	RXZE2M114M



Compact smart relays		With display, a.c. power supply					
Supply voltage		24 VAC		100...240 VAC			
Number of inputs/outputs		12	20	10	12	20	20
Number of inputs	Discrete inputs	8	12	6	8	12	12
Number of outputs		4 relay	8 relay	4 relay	4 relay	8 relay	8 relay
Dimensions, W x D x H (mm)		71.2x59.5x107.6	124.6x59.5x107.6	71.2x59.5x107.6		124.6x59.5x107.6	
Clock		yes	yes	no	yes	no	yes
References		SR2B121B	SR2B201B	SR2A101FU (1)	SR2B121FU	SR2A201FU (1)	SR2B201FU

(1) Programming on smart relay in LADDER language only



Compact smart relays		With display, d.c. power supply					
Supply voltage		12 VDC		24 VDC			
Number of inputs/outputs		12	20	10	12	20	20
Number of inputs	Discrete inputs	8	12	6	8	12	12
	including 0-10 V analogue inputs	4	6	-	4	2	6
Number of outputs		4 relay	8 relay	4 relay	4	8 relay	8
Dimensions, W x D x H (mm)		71.2x59.5x107.6	124.6x59.5x107.6	71.2x59.5x107.6		124.6x59.5x107.6	
Clock		yes	yes	no	yes	no	yes
References		SR2B121JD	SR2B201JD	SR2A101BD (1)	SR2B120BD (2)	SR2A201BD (1)	SR2B200BD (2)

(1) Programming on smart relay in LADDER language only

(2) Replace the • by number 1 to order a smart relay with **relay output** or by 2 for a smart relay with **transistor output** (Example: SR2B121BD)



Compact smart relays		Without display and without buttons					
Supply voltage		100...240 VAC			24 VDC		
Number of discrete inputs/outputs		10	12	20	10	12	20
Number of inputs	Discrete inputs	6	8	12	6	8	12
	including 0-10 V analogue inputs	-	-	-	-	4	6
Number of outputs		4 relay	4 relay	8 relay	4 relay	4 relay	8 relay
Dimensions, W x D x H (mm)		71.2x59.5x107.6		124.6x59.5x107.6	71.2x59.5x107.6		124.6x59.5x107.6
Clock		no	yes	yes	no	yes	yes
References		SR2D101FU (1)	SR2E121FU	SR2E201FU	SR2D101BD (1)	SR2E121BD (3)	SR2E201BD (3)

(1) Programming on smart relay in LADDER language only

(3) To order a smart relay for a **24 VAC** supply (no analogue inputs), delete the letter **D** from the end of the reference (**SR2E121B** and **SR2E201B**)

## Modular, SR3



Modular smart relays*		With display						
Supply voltage		24 VAC		100...240 VAC		12 VDC	24 VDC	
Number of inputs/outputs		10	26	10	26	26	10	26
Number of inputs	Discrete inputs	6	16	6	16	16	6	16
	including 0-10 V analogue inputs	–	–	–	–	6	4	6
Number of outputs		4 relay	10 relay	4 relay	10 relay	10 relay	4	10
Dimensions, W x D x H (mm)		71.2x59.5x107.6	124.6x59.5x107.6	71.2x59.5x107.6	124.6x59.5x107.6	124.6x59.5x107.6	71.2x59.5x107.6	124.6x59.5x107.6
Clock	yes	yes	yes	yes	yes	yes	yes	yes
References	SR3B101B	SR3B261B	SR3B101FU	SR3B261FU	SR3B261JD	SR3B10eBD (1)	SR3B26eBD(1)	

\*The modular base can be fitted with one I/O extension module. The 24 VDC modular base can be fitted with one communication module and/or one I/O extension module

(1) Replace the • by number 1 to order a smart relay with **relay output** or by 2 for a smart relay with **transistor output** (Example: SR3B101BD)



Extension modules for Zelio Logic SR3B••••• (2)		Communication		Discrete Inputs/Outputs			Analogue Inputs/Outputs
Network		Modbus	Ethernet	–			–
Number of inputs/outputs		–	–	6	10	14	4
Number of inputs	Discrete	–	–	4	6	8	–
	Analogue (0...10 V, 0...20 mA, PT100)	–	–	–	–	–	2 (1 PT100 max.)
Number of outputs	Relay	–	–	2 relay	4 relay	6 relay	–
	Analogue (0...10 V)	–	–	–	–	–	2
Dimensions, W x D x H (mm)		35.5x59.5x107.6		35.5x59.5x107.6		72x59.5x107.6	35.5x59.5x107.6
References	24 VAC	–	–	SR3XT61B	SR3XT101B	SR3XT141B	–
	100...240 VAC	–	–	SR3XT61FU	SR3XT101FU	SR3XT141FU	–
	12 VDC	–	–	SR3XT61JD	SR3XT101JD	SR3XT141JD	–
	24 VDC	SR3MBU01BD	SR3NET01BD	SR3XT61BD	SR3XT101BD	SR3XT141BD	SR3XT43BD

(2) The power supply of the extension modules is provided via the Zelio Logic modular relays

## Zelio Soft 2 software and programming tools



Zelio Soft 2 software, connecting cables, wireless connecting, memory	Multilingual programming software	Connecting cables	Wireless connection	Back-up memory
Description	PC CD-ROM (Windows 98, NT, 2000, XP) (3)	Serial PC/Smart relay	USB PC/Smart relay	Bluetooth interface
References	SR2SFT01	SR2CBL01	SR2USB01	SR2BTC01

(3) CD-ROM including Zelio Soft 2 programming software, an application library, a self-training manual, installation instructions and a user's manual

## Communication interface for SR2/SR3

Interface, modems, Zelio Logic Alarm software	Communication interface	Modems (4)	Alarm management software
Supply voltage	12...24 VDC	12...24 VDC	12...24 VDC
Description	–	Analogue modem	GSM modem
Dimensions, W x D x H (mm)	72x59.5x107.6	120.7x35x80.5	111x25.5x54.5
References	SR2COM01	SR2MOD01	SR2MOD02

(4) Must be used in conjunction with communication interface SR2COM01



Simplicity, ease of use



Ethernet  
Ready

Type of base	Compact			
Number of digital i/O	10	16	24	40
Number of digital inputs (24 VDC)	6 sink/source	9 sink/source	14 sink/source	24 sink/source
Number of digital outputs	4 relay (2 A)	7 relay (2 A)	10 relay (2 A)	14 relay (2 A), 2 solid-state (1 A)
Type of connection	Screw terminals (non removable)			
Possible I/O expansion modules	–	–	4	7
Counting	3 x 5 kHz, 1 x 20 kHz			
PWM positioning	–			
Serial ports	1 x RS 485	1 x RS 485; option: 1 x RS 232C or RS 485		
Protocol	Modbus master/slave, ASCII, I/O relocation			
Ethernet port	–	–	–	RJ45 Ethernet
Dimensions, W x D x H	80 x 70 x 90 mm	80 x 70 x 90 mm	95 x 70 x 90 mm	157 x 70 x 90 mm
References	Supply voltage 100...240 VAC	TWDLCAA10DRF	TWDLCAA16DRF	TWDLCAA24DRF
	Supply voltage 19.2...30 VDC	TWDLCAA10DRF	TWDLCAA16DRF	TWDLCAA24DRF
	Real-time clock (option)	TWDXCPRTC		
	Display unit (option)	TWDXCPODC		
	Memory cartridge (option)	TWDXCPMF32 (3)		
		TWDXCPMF64 (4)		

(1) 40 I/O version without Ethernet also available: TWDLCAA40DRF and TWDLCAA40DRF



Compactness, flexibility



Type of base	Modular		
Number of digital i/O	20		40
Number of digital inputs (24 VDC)	12 sink/source	12 sink/source	24 sink/source
Number of digital outputs	8 transistor, source (0.3 A)	6 relay (2 A) & 2 trans., source (0.3 A)	16 transistor, source (0.3 A)
Type of connection	HE10 connector		
Possible I/O expansion modules	4	7	7
Supply voltage	24 VDC		
Counting	2 x 5 kHz, 2 x 20 kHz		
PLS/PWM positioning	2 x 7 kHz		
Serial ports	1 x RS 485; option: 1 x RS 232C or RS 485		
Protocol	Modbus master/slave, ASCII, I/O relocation		
Dimensions, W x D x H	35.4 x 70 x 90 mm	47.5 x 70 x 90 mm	47.5 x 70 x 90 mm
References	TWDLMDA20DTK (2)		
	TWDLMDA20DRT		
	TWDLMDA40DTK (2)		
	Real-time clock (option)	TWDXCPRTC	
	Display unit (option)	TWDXCPODM	
	Memory cartridge (option)	TWDXCPMF32 (3)	TWDXCPMF64 (4)

(2) Sink version transistor outputs also available: TWDLMDA20DUK and TWDLMDA40DUK

(3) Application backup, program transfer

(4) Memory expansion, application backup, program transfer

# Programmable controllers I/O modules

New



Type of module	Analogue inputs							
Number of inputs	2 I	2 I	4 I	8 I	8 I			
Connection	Removable screw terminals							
Inputs	Range	Thermocouples type K, J, T	0...10 V (1) 4...20 mA (2)	0...10 V (1) 4...20 mA (2)	0...10 V (1) 4...20 mA (2)			
	Resolution	12 bits (4096 points)			10 bits (1024 points)			
Measuring accuracy	0.2% of the full scale value							
Supply voltage	24 VDC							
Dimensions, W x D x H	23.5 x 70 x 90 mm							
References	TWDAMI2LT	TWDAMI2HT	TWDAMI4LT	TWDAMI8HT	TWDARI8HT			

(1) Non differential

(2) Differential



New



Type of module	Analogue Outputs, Inputs/Outputs (mixed)				
Number of inputs and/or outputs	1 O	2 O	2 I / 1 O	2 I / 1 O	4 I / 2 O
Connection	Removable screw terminals				
Inputs	Range	–	–	0...10 V (1) 4...20 mA (2)	Thermocouple type K, J & T 3-wire Pt 100 thermal probe
	Resolution	–	–	12 bits (4096 points)	12 bits (4096 points)
Outputs	Range	0...10 V (1) 4...20 mA (2)	± 10 V	0...10 V (1) 4...20 mA (2)	0...10 V (1) 4...20 mA (2)
	Resolution	12 bits	11 bits + sign	12 bits	12 bits
Measuring accuracy	0.2% of the full scale value				
Supply voltage	24 VDC				
Dimensions, W x D x H	23.5 x 70 x 90 mm				
References	TWDAMO1HT	TWDAVO2HT	TWDAMM3HT	TWDALM3LT	TWDAMM6HT

(1) Non differential

(2) Differential



Type of module	Digital Inputs/Outputs					
Number of inputs and/or outputs	8 I / 8 O					
Connection	Removable screw terminals					
References	Inputs	24 VDC sink	TWDDDI8DT	–	–	–
		24 VDC sink/source	–	TWDDDI16DT	TWDDDI16DK	TWDDDI32DK
		120 V sink	TWDDAI8DT	–	–	–
Outputs	Relay (2 A)	TWDDRA8RT	TWDDRA16RT	–	–	–
	Transistor, source (0.1 A)	TWDDDO8TT (3)	–	TWDDDO16TK (3)	TWDDDO32TK (3)	–
	Inputs, 24 VDC sink/source + Outputs, relay (2 A)	–	–	–	–	TWDDMM8DRT
						TWDDMM24DRF

(3) Sink version transistor outputs also available: TWDDDO8UT, TWDDDO16UK and TWDDDO32UK



Type of module	Serial interface		Serial interface adaptor	
Physical layer (non isolated)	RS 232C	RS 485	RS 232C	RS 485
Connection	Mini-DIN connector	Screw terminals	Mini-DIN connector	Screw terminals
Protocol	Modbus master/slave, ASCII, I/O relocation			
Twido base compatibility	Modular base TWDLMDA		Compact base TWDLCAA16/24DRF Modular base via integrated display module TWDXCPDM	
References	TWDNOZ232D	TWDNOZ485D	TWDNOZ485T	TWDNAC232D
			TWDNAC485D	TWDNAC485T



Type of module	CANopen expansion	Ethernet interface	Modbus isolation module	Modbus junction module	AS-Interface master
Number of modules	1	1	–	–	2 (1)
Connection	SUB-D9	RJ45	RJ45	RJ45	Removable screw terminals
Twido base compatibility	20, 24 or 40 I/O base	All models	All models	All models	20, 24 or 40 I/O base
References	TWDNCO1M	499TWD01100	TWDXCAISO	TWDXCAT3RJ	TWDNOI10M3

(1) 2 modules max., 62 digital slaves max., 7 analogue slaves max., AS-Interface/M3, V 2.11 (profile S.7.4 not supported)

## Programming software



Software, connecting cables, interfaces	TwidoSuite software V1.0 EN/FR	TwidoAdjust software	Connecting cables		Bluetooth® USB adaptor	Bluetooth® gateway
Application	PC with Windows 2000® or XP	Pocket PC 2003 or 2005	Twido/PC USB port	Twido/PC serial port	For PC not fitted with Bluetooth®	For Twido controller
References	TWDBTFU10EF(2)	TWDSMD1002V30M	TSXCUSB485	TSXPCX1031 (3)	VW3A8115	VW3A8114

(2) For other languages, replace the last 2 letters of the reference (EF) by the following letters: **ES** for English-Spanish, **ET** for English-Italian, **ED** for English-German or **EC** for English-Chinese (simplified).

(3) For Twido Extreme: order the reference VW3A8106

# Programmable controllers

## Bases



Robustness

New



Type of base	Twido Extreme	
Number of I/O	41	
Degree of protection	IP67	
Temperature	-40...+110°C, storage -55...+155°C	
Relative humidity	90% without condensation	
Number of inputs	Digital	13 (short-circuit protected)
	Analogue	8 (including 1 input configurable to PWM)
	PWM	1
Number of outputs	Digital	16* (short-circuit protected)
	PWM or PLS	3
Supply voltage	12 or 24 VDC	
Counting	1 x 10 kHz	
Communication ports	RS 485, CAN J1939, CANopen master	
Serial link protocols	Modbus RTU master/slave, ASCII	
Dimensions, W x D x H	165.51 x 45.70 x 225 mm	
References	TWDLEDCK1	

\* 16 outputs in 12 VDC. Limited to 8 outputs in 24 VDC.



Fixing and connection	Fixing kit	70-pin connector	Pre-wired 70-pin connector
Details	4 spacers, 8 washers, 8 shock mounts	80 pins, 80 blanking plugs, 1 cover	Pre-wired with 1.5 m long cable, free wires other end
Degree of protection	–	IP67	IP67
References	TWDXMTK4	TWDFCNK70	TWDFCWK70L015

Separate components	Crimping tool	RJ45 programming connector
Application	Crimping wires onto pins of 70-pin connector	Connecting Twido Extreme to a programming PC
References	TWDXMTCT	TWDNAK70P



Type of processor	TSX 3705	TSX 3708	TSX 3710
<b>Power supply</b>	110...240 VAC		24 VDC
<b>Number of slots</b>	Standard On extension	2 (1 available) –	3 (1 available) –
<b>Number of integrated discrete I/O modules</b>	1 (16 I, 12 Q)	2 (32 I, 24 Q)	1 (16 I, 12 Q)
<b>Number of integrated analog I/O channels</b>	–	–	–
<b>Type of integrated I/O</b>	I: 24 VDC, Q: relay	I: 24 VDC, Q: relay	I: 24 VDC, Q: sol.st. 0.5 A
<b>Application-specific modules (counter, position control)</b>	2 half-size		2 half-size
<b>Bus</b>	AS-Interface cabling system CANopen machine bus Fipio fieldbus	– – –	1 half-size – –
<b>Networks</b>	Modbus Plus, Fipway Ethernet TCP/IP	– –	– 1 external module
<b>Memory capacity</b>	Integrated With PCMCIA extension	11 K words –	14 K words –
<b>Execution time for one instruction</b>	Boolean Numerical	0.25 µs 4.81 µs	0.25 µs 4.81 µs
<b>Rack dimensions (WxDxH)</b>	170,3 x 132,5 x 151 mm	230 x 132,5 x 151 mm	170,3 x 132,5 x 151 mm
<b>Reference</b>	With screw terminals With HE 10 connector (1)	TSX3705028DR1 –	TSX3708056DR1 –
TSX3710128DT1 TSX3710128DTK1	–	–	–

(1) For use with Advantys Telefast ABE7 wiring system

(2) Basic configuration provided without I/O modules

## Memory extension



Type of PCMCIA card for TSX 3721/22	Application		
<b>Technology</b>	SRAM	Flash EPROM	Backup
<b>Memory size (3)</b>	<b>TSXMRPP128K</b>	<b>TSXMFPP128K</b>	<b>TSXMFPP096K</b>
32 K words			–
32 K words/128 K words	<b>TSXMRPP348K</b>	<b>TSXMCPC224K</b>	–
64 K words	<b>TSXMRPP224K</b>	<b>TSXMFPP224K</b>	–
64 K words/128 K words	<b>TSXMRPP384K</b>	<b>TSXMCPC224K</b>	–
128 K words	<b>TSXMRPC448K</b>	<b>TSXMFPP384K</b>	–
128 K words/128 K words	<b>TSXMRPC768K</b>	–	–

(3) The 1<sup>st</sup> value corresponds to the size of the application area, the second to the size of the area for data storage (recipes, production data, etc).



TSX 3710			TSX 3721		TSX 3722	
24 VDC 2 (1 available)	110...240 VAC		24 VDC 3 (3 available)	110...240 VAC	24 VDC 3 (3 available)	110...240 VAC
2			2		2	
2 (32 I, 32 Q)	1 (16 I, 12 Q)	1 (16 I, 12 Q)	—	—	—	—
—	—	—	—	—	1 (8 I, 1 Q)	
I: 24 VDC, Q: sol. st. 0.1 A	I: 115 VAC, Q: relay	I: 24 VDC, Q: relay	—	—	I: 0...10 V or 0/4...20 mA, Q: 0...10 V	
2 half-size			4 half-size		4 half-size (2 integrated channels)	
1 half-size			1 half-size		1 half-size	
—			1 PCMCIA card		1 PCMCIA card	
—			1 PCMCIA card		1 PCMCIA card	
—			1 PCMCIA card		1 PCMCIA card	
1 external module			1 external module		1 external module	
14 K words			20 K words		20 K words	
—			128 K words + 128 K words for file storage		128 K words + 128 K words for file storage	
0.25 µs			0.13 µs (0.19 µs with PCMCIA)		0.13 µs (0.19 µs with PCMCIA)	
4.81 µs			4.50 µs		4.50 µs	
170,3 x 132,5 x 151 mm			230 x 132,5 x 151 mm			
—	TSX3710028AR1	TSX3710028DR1	TSX3721101 (2)	TSX3721001 (2)	TSX3722101 (2)	TSX3722001 (2)
TSX3710164DTK1	—	—				

## Mini extension rack



Type of rack	2 slots (4 positions)
For use with	TSX3710/21/22
Rack dimensions (WxDxH)	112,5 x 132,5 x 151 mm
Reference	TSXRKZ2

Process power supplies see chapter 6 "Power supply"



Type of module	Discrete inputs			
Connection	By HE 10 connector (1)   By screw terminals supplied			
Module format	Half		Standard	Half
Number of channels	12		32	8
Input voltage	24 VDC positive logic	TSXDEZ12D2K	–	TSXDEZ32D2
	24 VDC positive/negative logic	–	TSXDEZ12D2	–
	100...120 VAC	–	–	TSXDEZ08A4
	200...240 VAC	–	–	TSXDEZ08A5

(1) For use with Advantys Telefast ABE7 wiring system



Type of module	Discrete outputs				Relay	
	Solid state					
Connection	By HE 10 conn. (1)   By screw terms. supplied					
Module format	Half		Standard	Half		
Number of protected channels	8		32	4	8	32
Protection of outputs	Yes		Yes	Yes	No	No
Output voltage/current	24 VDC/0.5 A	TSXDSZ08T2K	TSXDSZ08T2	TSXDSZ32T2	–	–
	24 VDC/2 A	–	–	–	TSXDSZ04T22	–
	24 VDC/1 A per channel	–	–	–	–	TSXDSZ08R5
	200...240 VAC/1 A per channel	–	–	–	–	TSXDSZ32R5

(1) For use with Advantys Telefast ABE7 wiring system



Type of module	Discrete I/O					
Connection	By HE 10 connector (1)					
Module format	Half   Standard					
Number of inputs	8	16	32	16	16	16
Number of outputs	8 solid state	12 solid state	32 solid state	12 solid state	12 solid state	12 solid state
Protection of outputs	Yes				No	
Voltage/current	24 VDC/0.5 A	TSXDMZ16DTK	TSXDMZ28DTK	–	TSXDMZ28DT	–
output	24 VDC/0.1 A	–	–	TSXDMZ64DTK	–	–
	100...120 VAC/50 VA	–	–	–	TSXDMZ28DR	TSXDMZ28AR

(1) For use with Advantys Telefast ABE7 wiring system

## Analog I/O modules



Type of module	Analog inputs		High level isolated
Connection	High level with common point		By screw terminals supplied
Number of channels	8		4
Resolution	11 bits + sign	12 bits	16 bits
Input signal	$\pm 10$ V, 0...10 V	0...20 mA, 4...20 mA	(1)
Reference	TSXAEZ801	TSXAEZ802	TSXAEZ414

(1)  $\pm 10$  V, 0...10 V, 0...5 V, 1...5 V, 0...20 mA, 4...20 mA, B, E, J, K, L, N, R, S, T, U, Pt 100, Ni 1000 (2 or 4-wire), thermal probe, thermocouple



Type de module	Analog outputs	
	With common point	
Connection	By screw terminals supplied	By screw terminals supplied
Number of channels	4	2
Resolution	11 bits + sign	11 bits + sign or 12 bits
Input signal	$\pm 10$ V, 0...10 V	$\pm 10$ V, 0...20 mA, 4...20 mA
Reference	TSXASZ401	TSXASZ200



Type of module	Analog I/O	Analog I/O
	Integrated	High level with common point
Connection	By 15-way SUB-D connector not supplied	By screw terminals supplied
Number of inputs	8	4
Number of outputs	1	2
Resolution	8 bits	11 bits + sign or 12 bits
I/O signal	0...10 V, 0...20 mA, 4...20 mA	$\pm 10$ V, 0...10 V, 0...20 mA, 4...20 mA
Reference	TSX3722 (2)	TSXAMZ600

(2) References: see pages 3/16 and 3/17, TSX3722 basic configuration



Type of module	Counting on discrete I/O module	Integrated counting on TSX 3722
Type of inputs for	Sensors, limit switches Totem Pole incremental encoders	Sensors, limit switches Totem Pole incremental encoders
Frequency	500 Hz	10 kHz
Response time	8 ms	8 ms
Number of channels	2 (1)	2 (2)
Reference	TSX37 (3)	TSX3722 (3)

(1) On the first 4 inputs of the 28, 32 or 64 discrete I/O modules

(2) Plus 2 channels on the discrete I/O

(3) References: see pages 3/12 and 3/13, TSX37 basic configuration

## Counter/position control modules



Type of module	Counter			Positioning
Type of inputs for	2-wire PNP sensors 24 VDC Totem Pole incremental encoders 5 VDC RS 422, 10...30 VDC			SSI or parallel absolute encoder 5 VDC, 10...30 VDC
Frequency	40 kHz	40 kHz	500 kHz	200 or 1000 kHz
Response time	5 ms	5 ms		5 ms
Number of channels	1	2		1
Reference	TSXCTZ1A	TSXCTZ2A	TSXCTZ2AA	TSXCTZ1B

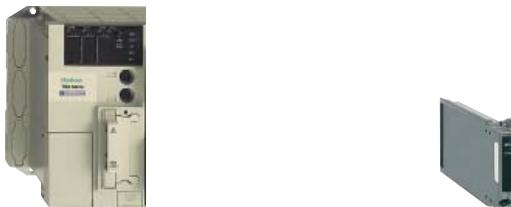
## Communication modules



Type of module		Ethernet TCP/IP network For TSX 3710/21/22 PLCs	
<b>Speed</b>	10/100 MBps	10/100 MBps	
<b>Standard services</b>	TCP/IP(Uni-TE, Modbus)	TCP/IP(Uni-TE, Modbus)	
<b>Transparent Ready</b>	Class B20	C20	
I/O Scanning	Yes	Yes	
<b>Web server</b>	Standard services	Yes	Yes
	FactoryCast services	–	Yes with 8 MB of user Web pages and graphics editor
<b>Reference</b>	TSXETZ410	TSXETZ510	



Type of module	AS-Interface cabling system	CANopen machine bus	Fipio fieldbus
<b>Name and description</b>	Half size in-rack	PCMCIA card	PCMCIA card
<b>Speed</b>	167 kbps	20 kbps...1 MBps dep. on distance	1 MBps
<b>Reference</b>	TSXSAZ10	TSXCPP110	TSXFPP10



Type of module	Serial links Uni-Telway, Modbus		
<b>Name and description</b>	Integrated port	Multiprotocol PCMCIA card	
<b>Speed</b>	19.2 kbps	1.2...19.2 kbps	
<b>Reference</b>	With interface RS 485	TSX37 (1)	TSXSCP114
	RS 232D	–	TSXSCP111
	20 mA CL	–	TSXSCP112

(1) References: see pages 3/12 and 3/13, TSX3705/08/10 PLCs with link integrated on TER terminal port, or TSX3721/22 PLCs with link integrated on AUX terminal port.



Type of module	Networks	Fipway
<b>Name and description</b>	Modbus Plus	
<b>Speed</b>	PCMCIA card	PCMCIA card
<b>Reference</b>	1 MBps	1 MBps
	TSXMBP100	TSXFPP20

Connection accessories: See [www.schneider-electric.com](http://www.schneider-electric.com)

New



Type of processor	Standard BMX P34 1000	High-performance BMX P34 2010	BMX P34 2020	BMX P34 2030	
Number of racks	1 (4, 6, 8 or 12 slots)	Maximum 12 slots for processor and modules (excluding power supply module)			
<b>Maximum configuration</b>					
<b>Functions</b>					
Max. no. (1)	Discrete I/O	512	704		
	Analog I/O	66			
	Control channels	Programmable loops (via CONT-CTL process control EFB library)			
	Counter channels	20	36		
	Motion control	–	Independent axes on CANopen bus (via MFB library)	– Independent axes on CANopen bus (via MFB library)	
Integrated connections	Ethernet TCP/IP	–	1 RJ45 port, 10/100 MBps, with Transparent Ready class B10 standard web server		
	CANopen master bus	–	1 (9-way SUB-D)	–	
	Serial link	1 RJ45 port, Modbus master/slave RTU/ASCII or character mode (non isolated RS 232C/RS 485), 0.3...19.2 kBps			
	USB port	1 port, 12 MBps			
Communication module	Ethernet TCP/IP	1 RJ45 port, 10/100 MBps with: - Transparent Ready class B30 standard web server with BMX NOE 0100 module - Transparent Ready class C30 configuration web server with BMX NOE 0110 module			
<b>Internal user RAM</b>	Total capacity	2048 Kb	4096 Kb		
	Program, constants and symbols	1792 Kb	3584 Kb		
	Data	128 Kb	256 Kb		
<b>Execution time for one instruction</b>	Boolean	0.18 µs	0.12 µs		
	On words or fixed point arithmetic	Single-length words	0.38 µs	0.25 µs	
		Double-length words	0.26 µs	0.17 µs	
	On floating points		1.74 µs	1.16 µs	
<b>No. of K instructions executed per ms</b>	100% Boolean	5.4 Kinst/ms	8.1 Kinst/ms		
	65% Boolean and 35% fixed arithmetic	4.2 Kinst/ms	6.4 Kinst/ms		
<b>System overhead</b>	Master task	1.05 ms	0.70 ms		
	Fast task	0.20 ms	0.13 ms		
<b>References</b>	BMX P34 1000	BMX P34 2010	BMX P34 2020	BMX P34 2030	

(1) Only affects in-rack modules. The remote I/O on the CANopen bus are not included in these maximum numbers.



Type of card	8 MB memory card	8 MB memory card + files
Use	Supplied as standard with each processor. Used for: – Backup of program, constants, symbols and data – Activation of class B10 web server	As replacement for the memory card supplied as standard with each processor, used for: – Backup of program, constants, symbols and data – File storage, 16 MB – Activation of class B10 web server
Compatibility	BMX P34 1000/20.0	BMX P34 20.0
References	BMX RMS 008MP	BMX RMS 008MPF

## Communication modules



Type of module	Ethernet TCP/IP network		
Speed	10/100 MBps		
Standard services	Modbus TCP/IP messaging	TCP/IP (Uni-TE, Modbus)	
Conformity class	Transparent Ready	class B30	Transparent Ready class C30
Communication service	I/O Scanning service	Yes	
Transparent Ready	FDR service	Yes (client/server)	
	SNMP network management service	Yes	
	Global Data service	Yes	
	SOAP/XML Web service	No	Server
	Passband management	Yes	
References	BMX NOE 0100		BMX NOE 0110
Memory card	Compatibility	Ethernet module BMXNOE0100	
	Use	Provides services conforming to Transparent Ready: Class B	Class C 16 MB available for user web pages
References	BMX RWS B000M		BMX RWS C016M

## USB connexion cordsets

Designation	Terminal port/USB cordsets	
Use	From	Mini B USB port on the Modicon M340 processor
	To	PC terminal type A USB port
Length	1.8 m	4.5 m
References	BMX XCA USB H018	BMX XCA USB H045



Type of module	Power supply modules			
Voltage	24 VDC isolated	24...48 VDC isolated	100...240 VAC	
Nominal input current	1...24 VDC	1.65...24 VDC, 0.83...48 VAC/DC	0.61...115 VAC	
Micro-break duration	≤ 1			
Integrated protection	Via internal fuse (not accessible)			
Max. useful power	17W	32 W	20 W	36 W
Max. dissipated power	8.5 W			
Removable connectors (set of 2)	supplied as standard to be ordered separately	BMX XTS CPS10 (cage clamp) BMX XTS CPS20 (spring-type)	BMX CPS 2010 BMX CPS 3020	BMX CPS 2000 BMX CPS 3500
References				

## Racks



Designation	Racks			
Type of modules to be installed	BMX CPS power supply, BMX P34 processor, I/O modules and application-specific modules (counter, communication)			
No. of slots	4	6	8	12
References	BMX XBP 0400	BMX XBP 0600	BMX XBP 0800	BMX XBP 1200

## Optional connection accessories

Shielding connection kit	For BMX EHC 0200/0800 modules			
	Consisting of a metal bar, 2 sub-bases for mounting on rack and a set of spring clamping rings			
Rack	BMX XBP 0400	BMX XBP 0600	BMX XBP 0800	BMX XBP 1200
References	BMX XSP 0400	BMX XSP 0600	BMX XSP 0800	BMX XSP 1200

Spring clamping rings (pack of 10)	Cables with cross-section	1.5...6 mm <sup>2</sup>	5...11 mm <sup>2</sup>
References	STB XSP 3010		STB XSP 3020

Protective covers (pack of 5)	For unoccupied slots on BMX XBP●●00 rack
References	BMX XEM 010



Type of module		DC input modules				
<b>Number of inputs</b>		16	16	32	64	16
<b>Connection</b>		Screw or spring-type 20-way removable terminal block		1 connector 40-way	2 connectors 40-way	Screw or spring-type 20-way removable terminal block
<b>Nominal input values</b>	Voltage	24 V	48 V	24 V		
	Current	3.5 mA	2.5 mA	1 mA	3 mA	
	Logic	Positive (sink)				Negative (source)
<b>Input limit values</b>	At state 1	Voltage	$\geq 11$ V	$\geq 34$ V	$\geq 11$ V	$\geq 15$ V
		Current	$> 2$ mA (for $U \geq 11$ V)	$> 2$ mA (for $U \geq 34$ V)	$> 2$ mA (for $U \geq 11$ V)	$> 1$ mA (for $U \geq 5$ V)
	At state 0	Voltage	$< 5$ V	$< 10$ V	$< 5$ V	
		Current	$\geq 1.5$ mA	$\geq 0.5$ mA	$\geq 1.5$ mA	$\geq 0.5$ mA
<b>References</b>		BMX DDI 1602	BMX DDI 1603	BMX DDI 3202K	BMX DDI 6402K	BMX DAI 1602



Type of module		AC input modules			
<b>Number of inputs</b>		16			
<b>Connection</b>		Screw or spring-type 20-way removable terminal block			
<b>Nominal input values</b>	Voltage	24 VAC	48 AC	100...120 VAC	
	Current	3 mA			
	Frequency	50/60 Hz			
<b>Input limit values</b>	At state 1	Voltage	$\geq 15$ V	$\geq 34$ V	$\geq 74$ V
		Current	$\geq 2$ mA		$\geq 2.5$ mA
	At state 0	Voltage	$\leq 5$ V	$\leq 10$ V	$\leq 20$ V
		Current	$\leq 1$ mA		
<b>References</b>		BMX DAI 1602	BMX DAI 1603	BMX DAI 1604	



Type of module		DC solid state output modules			
<b>Number of inputs</b>		16	16	32	64
<b>Connection</b>		Screw or spring-type 20-way removable terminal block		One 40-way connector	Two 40-way connectors
<b>Nominal output values</b>	Voltage	24 VDC			
	Current	0.5 V		0.1 V	
	Logic	Positive (source)	Negative (sink)	Positive (source)	
<b>Output limit values</b>	Voltage (ripple included)	19...30 (possible up to 34 V, limited to 1 hour in every 24 hours)			
	Current per channel	0.625 A			
	Current per module				
<b>Maximum dissipated power</b>		4	2.26	3.6	6.85
<b>References</b>		BMX DDO 1602	BMX DDO 1612	BMX DDO 3202K	BMX DDO 6402K



Type of module		Triac output modules
Number of inputs		16
Connection		Screw or spring-type 20-way removable terminal block
Operating voltage	Nominal	100...240 VAC
	Limit	85...288 VAC
Currents	Maximum	0.6 per channel, 2.4 per common, 4.8 for all 4 commons.
	Minimum	25 mA at 100 V a, 25 mA at 240 V a.
Maximum inrush current		≤ 20/cycle
Reference	BMX DAO1605	



Type of module		Relay output modules	
Number of inputs		8	16
Connection		Screw or spring-type 20-way removable terminal block	
Max. operating voltage	DC	10...34 VDC	24...125 VDC (resistive load)
	AC	10...264 VAC	200...264 VAC ( $\text{Cos}\phi = 1$ )
Response time	Activation	< 10 ms	
	Deactivation	< 8 ms	< 12 ms
Dissipated power		2.7 W max	3 W
References	BMX DRA 0805		BMX DRA 1605



Type of module		24 VDC mixed I/O modules			
		Inputs	Solid state outputs	Inputs	Solid state outputs
Number of I/O		8	8	16	16
Connection		Screw or spring-type 20-way removable terminal block			
Input limit values	At state 1	Voltage	≥11V	≥11V	
		Current	≥3 mA (for $U \geq 11$ )	≥2 mA (for $U \geq 11$ )	
	At state 0	Voltage	5 V	5 V	
		Current	≤1.5 mA	≤1.5 mA	
		Sensor power supply (ripple included)			
Output limit values		19...30 V (possible up to 30 V, limited to 1 hour in every 24 hours)			
Maximum dissipated power	Voltage (ripple included)		19...30 (possible up to 30 V, limited to 1 hour in every 24 hours)		
	Current	per channel	0.625 A	0.125 A	
		per module	5 A	3.2 A	
			3.7 W	4 W	
References	BMX DDM 16022			BMX DDM 3202K	



Type of module		Mixed input/relay output modules	
Number of I/O		24 VDC inputs	
Connection		8	
Nominal values		Screw or spring-type 20-way removable terminal block	
Inputs	Voltage	24 VDC (positive logic)	24 VDC or 24...240 VAC relay outputs
	Current	3.5 mA	8
	Outputs	DC voltage	24 VDC
		DC	2 (resistive load)
Outputs	AC voltage		220 VAC, $\text{Cos}\phi = 1$
		AC	2 A
	At state 1	Voltage	$\geq 11\text{V}$
		Current	$\geq 2 \text{ mA}$ (for $U \geq 11 \text{ V}$ )
Input limit values	At state 0	Voltage	5 V
		Current	$\leq 1.5 \text{ mA}$
	Sensor power supply (ripple included)		
	19...30 V (possible up to 30 V, limited to 1 hour in every 24 hours)		
Maximum dissipated power		3.1 W	
Reference		BMX DDM 16025	

## Connection accessories



20-way removable connection blocks			
For module with 20-way removable terminal block	Cage clamp	Screw clamp	Spring-type
References	BMX FTB 2000	BMX FTB 2010	BMX FTB 2020



Preformed cordsets for I/O modules with removable terminal block			
Preformed cordsets with one end with flying leads	One 20-way terminal block, one end with color-coded flying leads		
Length	3 m	5 m	10 m
References	BMX FTW 301	BMX FTW 501	BMX FTW 1001



Preformed cordsets for I/O modules with 40-way connectors				
Preformed cordsets		one end with flying leads	for Advantys Telefast ABE7 sub-bases	
No. of sheaths		1 x 20 wires (16 channels)   1 x 20 wires (32 channels)	1 x 20 wires (16 channels)	1 x 20 wires (32 channels)
Composition		One 40-way connector		
Cross-section		1 end w. col-coded flying leads   2 ends w. col-coded flying leads	1 HE 10 connector	2 HE 10 connectors
Reference	L = 0.5 m	—	—	BMX FCC 051   BMX FCC 053
	L = 1 m	—	—	BMX FCC 101   BMX FCC 103
	L = 2 m	—	—	BMX FCC 201   BMX FCC 203
	L = 3 m	BMX FCW 301	BMX FCW 303	BMX FCC 301   BMX FCC 303
	L = 5 m	BMX FCW 501	BMX FCW 503	BMX FCC 501   BMX FCC 503
	L = 10 m	BMX FCW 1001	BMX FCW 1003	BMX FCC 1001   BMX FCC 1003



Type of module	Analog input module		
Input type	Isolated high-level inputs	Isolated inputs, low-level voltage, resistors, temperature probes, thermocouples	
Number of channels	4	4	8
Nature of inputs	$\pm 10$ V, 0...10 V, 0...5 V, 1...5 V, $\pm 5$ V	$\pm 40$ mV, $\pm 80$ mV, $\pm 160$ mV, $\pm 320$ mV, $\pm 640$ mV, $\pm 1.28$ V	
Resolution	0.35 mV	15 mV + sign	
Reference	BMX AMI 0410	BMX ART 0414	BMX ART 0814



Type of module	Analog output module		
Output type	Isolated high-level outputs		
Number of channels	2		
Range	Voltage $\pm 10$ V Current 0...20 mA and 4...20 mA		
Resolution	15 bits + sign		
Reference	BMX AMO 0210		

Type of module	Mixed analog I/O module		
Channel type	Non-isolated high-level inputs	Non-isolated high-level outputs	
Number of channels	4	2	
Ranges	$\pm 10$ V, 0...5 V, 0...10 V, 1...5 V, 0...20 mA, 4...20 mA	$\pm 10$ V, 0...20 mA, 4...20 mA	
Maximum conversion value	Voltage $\pm 11.25$ V Current 0...30	$\pm 11.25$ V 0...24 mA	
Resolution	14 bits, 12 bits, 13 bits, 12 bits	12 bits, 11 bits	
Reference	BMX AMM 0600		

## Counter modules



Type of module	Counter module 32 bits	16 bits	32 bits
Modularity	2 channels	8 channels	4 channels
No. of sensor inputs	6 per channel	2 per channel	3 per channel
No. of actuator outputs	2 per channel		
Module cycle time	1 ms	5 ms	
Applications	Upcounting, downcounting, measurement, frequency meter, frequency generator, axis following	Upcounting, downcounting, measurement, interfacing	
References	BMX EHC 0200	BMX EHC 0800	



### 20-way removable terminal blocks

For use with modules	BMX AMI 0410 - BMX AM0 0210 - BMX AMM 0600		
Composition	Cage clamp	Screw clamp	Spring-type
Reference	BMX FTB 2000	BMX FTB 2010	BMX FTB 2020



### Preformed cordsets with one end with flying leads

For use with modules	BMX AMI 0410	BMX AM0 0210	BMX AMM 0600	BMX ART 0414	BMX ART 0814
Composition	One 20-way terminal block		1 end w. col-coded flying leads	One 40-way connector	1 end w. col-coded flying leads
Reference	L = 3 m	BMX FTW 301S		BMX FCW 301S	
	L = 5 m	BMX FTW 501S		BMX FCW 501S	

### Advantys Telefast ABE 7 sub-bases

For use with modules	BMX AMI 0410	BMX ART 0414	BMX ART 0814
Composition	Distribution of isolated power supplies Delivers 4 protected isolated power supplies for 4...20 mA inputs. Direct connection of 4 inputs		
Reference	ABE 7CPA410		



### Preformed cordsets for Advantys Telefast ABE 7 sub-bases

For use with modules	BMX AMI 0410	BMX ART 0414	BMX ART 0814
Composition	One 20-way removable terminal block and one 25-way SUB-D connector for ABE 7CPA410 sub-base	One 40-way connector and one 25-way SUB-D connector for ABE 7CPA412 sub-base	
Reference	L = 1.5 m	BMX FCA150	BMX FCA152
	L = 3 m	BMX FCA300	BMXFCA302
	L = 5 m	BMX FCA500	BMX FCA502

### Pack of connectors

For BMX EHC 0200 modules	Two 16-way connectors and one 10-way connector		
Reference	BMX XTS HSC 20		



### 20-way removable terminal blocks

#### For BMX EHC 0800 modules

Composition	Cage clamp	Screw clamp	Spring-type
References	BMX FTB 2000	BMX FTB 2010	BMX FTB 2020



Type of processor	TSX 5710 4 racks max.	TSX 5720 16 racks max.	TSX 5730 16 racks max.
<b>Number of I/O</b>	Discrete	512	1024
in racks	Analog	24	80
<b>Integrated process control</b>		No / Yes	30 loops / Yes
<b>Application-specific channels</b> (counter, position control, weighing)		8	24
<b>Bus</b>	AS-Interface cabling system	2	4
	CANopen machine bus	1	1
	INTERBUS, Profibus DP fieldbus	–	1
<b>Networks</b> (Ethernet, Modbus Plus, Fipway)		1	2
<b>Memory capacity</b>	Without PCMCIA extension	96 Kb data/prog.	160/192 Kb data/prog. (1)
	With PCMCIA extension	96 Kb data/224 Kb prog.	160/192 Kb data (1)/768 Kb prog.
<b>Execution time for one</b>	Boolean	0.19 µs	0.19 µs
<b>instruction without ext. PCMCIA</b>	On word or arithmetic	0.25 µs	0.25 µs
<b>Reference</b>	Without integrated port	TSXP57104M (6)	TSXP57204M (6)
	Integrated Ethernet	TSXP571634M (2) (6)	TSXP572634M (6)
	Integrated CANopen	–	–
	Integrated Fipio	TSXP57154M (6)	TSXP57254M (6)
			TSXP57354M (6)

## Processors under PL7 software



Type of processor	TSX 5710 4 racks max.	TSX 5720 16 racks max.	TSX 5730 16 racks max.
<b>Number of I/O</b>	Discrete	512	1024
in racks	Analog	24	80
<b>Integrated process control</b>		No	30 loops
<b>Application-specific channels</b> (counter, position control, weighing)		8	24
<b>Bus</b>	AS-Interface cabling system	2	4
	CANopen machine bus	1 (with TSXP57103M)	1
	INTERBUS, Profibus DP fieldbus	–	1
<b>Networks</b> (Ethernet, Modbus Plus, Fipway)		1	1
<b>Memory capacity</b>	Without PCMCIA extension	32 K words data/prog.	48 K words data/prog. (4)
	With PCMCIA extension	32 K words data/64 K words prog.	32 K words data (4)/160 K words prog.
<b>Execution time for one</b>	Boolean	0.19 µs	0.19 µs
<b>instruction without ext. PCMCIA</b>	On word or arithmetic	0.25 µs	0.25 µs
<b>Reference</b>	Without integrated port	TSXP57103M (6)	TSXP57203M (6)
	Integrated Ethernet	–	TSXP572623M (6)
	Integrated Fipio	TSXP57153M (6)	TSXP57253M (6)
	Integrated Ethernet and Fipio	–	TSXP572823M (6)

(1) The second value corresponds to the integrated memory capacity when the processor is equipped with a Fipio manager integrated link

(2) Processor with double format

(3) PC format card on PCI bus

(4) The second value corresponds to the processor with integrated Fipio bus manager link.

(5) with PL7 V4.4 min.

(6) For coated version add C at the end of the reference: example **TSXP571634M** becomes **TSXP571634MC**



<b>TSX 5740</b> 16 racks max.	<b>TSX 5750</b> 16 racks max.	<b>TSX 5760</b>	<b>TSXH5724M</b>	<b>TSXH5744M</b>
2040	2040	2048	1024	2048
256	512	512	80	256
60 loops / Yes	90 loops / Yes	90 loops / Yes	30 loops / Yes	60 loops / Yes
64	64	64	0	0
8	8	8	0	0
1	1	1	0	0
4	5	5	0	0
4	4	4	2	4
320 Kb data/prog.	1024 Kb data/prog.	2048 Kb data/prog.	192 Kb	440 Kb
440 Kb data/2 MB prog.	1024 Kb data/7 MB prog.	2048 Kb data/7 MB prog.	192 Kb data/768 Kb prog.	440 Ko data/2 MB prog.
0.06 µs	0.037 µs	0,037 µs	0,039 µs	0,039 µs
0.07 µs	0.045 µs	0,045 µs	0,054 µs	0,054 µs
–	–	–	TSXH5724M (6)	TSXH5744M (6)
TSXP574634M (6)	TSXP575634M (6)	TSXP576634M (6)		
–	–	–		
TSXP57454M (6)	TSXP57554M (6)	–		

### Atrium slot-PLCs under Unity Pro software



<b>TSX 5740</b> 16 racks max.	<b>PCI 5720</b> 16 racks max.	<b>PCI 5730</b> 16 racks max.
2048	1024	1024
256	80	128
60 loops	30 loops / Yes	45 loops / Yes
64	24	32
8	4	8
1	1	1
2	1	3
4	3 (6)	4
96 K words data/prog.	160 Kb data/prog. (1)	208 Kb data/prog. (1)
176 K words data/992 K words prog. (5)	160 Kb data/768 Kb prog.	208 Kb data (1)/1,75 MB prog.
0.06 µs	0.19 µs	0.12 µs
0.08 µs	0.25 µs	0.17 µs
–	TSXPCI57204M (3)	–
–	–	–
TSXP57453AM (6)	–	–
TSXP574823AM (6)	–	TSXPCI57354M (3)



Type of PCMCIA card	Application		Additional data
<b>Technology</b>	SRAM	Flash EPROM only	SRAM
<b>Memory size</b>	96 Kb	—	TSXMFPP096K (3)
	128 Kb	<b>TSXMRPP128K</b>	TSXMFPP128K
	224 Kb	<b>TSXMRPP224K / TSXMCPC224K</b>	TSXMFPP224K
	384 Kb	<b>TSXMRPP384K</b>	TSXMFPP384K
	448 Kb	<b>TSXMRPC448K (1)</b>	—
	512 Kb	—	TSXMCPC512K (2) / TSXMFPP512K
	768 Kb	<b>TSXMRPC768K (1)</b>	—
	1 MB	<b>TSXMRPC001M (1) (6)</b>	TSXMFPP001M
	1.7 MB	<b>TSXMRPC01M7</b>	—
	2 MB	<b>TSXMRPC002M (1)</b>	TSXMCPC002M (2) / TSXMFPPC002M
	3 MB	<b>TSXMRPC003M (1) (6)</b>	—
	4 MB	—	<b>TSXMFPP004M</b>
	7 MB	<b>TSXMRPC007M (1) (6)</b>	—
	8 MB	—	<b>TSXMRPF008M</b>

(1) By configuration, the user can reserve part of the memory space for data storage (recipes, production data) on request.

(2) These cards have an additional SRAM area for storing data (recipes, production data).

(3) Backup cartridge of the program when this one reside entirely in PLC internal memory.

## Memory extensions for PL7 processors



Type of PCMCIA card	Application		Additional data
<b>Technology</b>	SRAM	Flash EPROM only	SRAM
<b>Memory size (4)</b>	32 K words	<b>TSXMRPP128K</b>	TSXMFPP128K
	64 K words	<b>TSXMRPP224K</b>	TSXMFPP224K
	64 K words/128 K words	<b>TSXMRPP384K</b>	TSXMCPC224K
	96 K words	—	TSXMFPP096K
	128 K words	<b>TSXMRPC448K</b>	TSXMFPP384K
	128 K words/128 K words	<b>TSXMRPC768K (5)</b>	—
	256 K words	<b>TSXMRPC001M (6)</b>	—
	256 K words/640 K words	<b>TSXMRPC01M7 (5)</b>	—
	384 K words/640 K words	<b>TSXMRPC002M</b>	—
	512 K words	<b>TSXMRPC003M (5) (6)</b>	—
	992 K words/640 K words	<b>TSXMRPC007M (6)</b>	—
	2048 K words	—	<b>TSXMRPF004M</b>

(4) The 1<sup>st</sup> value corresponds to the size of the application area, the second to the size of the additional data area for storing data (recipes, production data, etc).

(5) These cards have an additional SRAM area for storing application object symbols.

(6) For coated version add C at the end of the reference: example **TSXMRPC001M** becomes **TSXMRPC001MC**

## Power supply modules (1)



Type of power supply module for	Premium					Atrium (2)
<b>Input voltage</b>	24 VDC		100...240 VAC	100...120/200...240 VAC		24 VDC
<b>Output voltage</b>	5 VDC/24 VDC					5 VDC
<b>Total useful power</b>	26 W	50 W	26 W	50 W	77 W	26 W
<b>Format</b>	Standard	Double	Standard	Double	Double	—
<b>Reference</b>	TSXPSY1610M (4)	TSXPSY3610M (4)	TSXPSY2600M (4)	TSXPSY5500M (4)	TSXPSY8500M (4)	TSXPSI2010

(1) Process power supplies see chapter 6 "Power supply"

(2) Only for Atrium slot-PLCs under Unity

## Racks



Type of rack	Non extendable	Extendable
<b>For configuration</b>	Mono-rack	Multi-rack (16 max.)
Dimensions WxDxP		
<b>Reference</b>	4 positions	Mono-rack
	188 x 160 x 151,5 mm (3)	TSXRKY4EX (4)
	6 positions	TSXRKY6 (4)
	8 positions	TSXRKY8 (4)
	12 positions	TSXRKY12 (4)
		TSXRKY12EX (4)

(3) Height of I/O modules : 151,5 mm with HE 10 or SUB-D connectors, 165 mm with screw terminals

(4) For coated version add C at the end of the reference: example **TSXPSY1610M** becomes **TSXPSY1610MC**

## Connection accessories

Type	Bus X daisy chaining cable for extendable racks	Line terminators
<b>Reference</b>	—	Set of 2
	—	TSXTLYEX
L = 1 m	TSXCBY010K	—
L = 3 m	TSXCBY030K	—
L = 5 m	TSXCBY050K	—
L = 12 m	TSXCBY120K	—
L = 18 m	TSXCBY180K	—
L = 28 m	TSXCBY280K	—
L = 38 m	TSXCBY380K	—
L = 50 m	TSXCBY500K	—
L = 72 m	TSXCBY720K	—
L = 100 m	TSXCBY1000K	—



Type of module	Discrete inputs				
<b>Connection</b>	By screw terminals TSXBLY01 (1)				
<b>Number of isolated channels</b>	8	16	16 (3)	32	64
<b>Input voltage</b>	24 VDC	TSXDEY08D2 (5)	TSXDEY16D2 (5)	TSXDEY16FK (5)	TSXDEY32D2K (5)
	48 VDC	–	TSXDEY16D3 (5)	–	TSXDEY32D3K (5)
	24 VAC	–	TSXDEY16A2 (4) (5)	–	–
	48 VAC	–	TSXDEY16A3 (5)	–	–
	100...120 VAC	–	TSXDEY16A4 (5)	–	–
	200...240 VAC	–	TSXDEY16A5 (5)	–	–

(1) Terminal block to be ordered separately

(2) For use with Advantys Telefast ABE7 wiring system

(3) Module with high-speed isolated inputs (filtering from 0.1 to 7.5 ms) able to activate the event-triggered task

(4) Module also compatible with 24 VDC negative logic



Type of module	Discrete outputs				Relay				Triac
	Solid state		By HE10 conn. (2)		By screw terminals TSXBLY01 (1)		By HE10 conn. (2)		
<b>Connection</b>	By screw terminals TSXBLY01 (1)	By HE10 conn. (2)	By screw terminals TSXBLY01 (1)	By HE10 conn. (2)	By screw terminals TSXBLY01 (1)	By HE10 conn. (2)	By screw terminals TSXBLY01 (1)	By HE10 conn. (2)	
<b>Number of protected channels</b>	8	16	32	64	8	16	8	16	
<b>Output voltage/current</b>	24 VDC/0.5 A	TSXDSY08T2(5)	TSXDSY16T2(5)	–	–	–	–	–	–
	24 VDC/2 A	TSXDSY08T22(5)	–	–	–	–	–	–	–
	24 VDC/0.1 A	–	–	TSXDSY32T2K (5)	TSXDSY64T2K (5)	–	–	–	–
	48 VDC/1 A	TSXDSY08T31(5)	–	–	–	–	–	–	–
	48 VDC/0.25 A	–	TSXDSY16T3 (5)	–	–	–	–	–	–
	24...48 VDC/24...240 VAC/5 A Th.c	–	–	–	–	TSXDSY08R5A (5)	–	–	–
	24...120 VAC/5 A Th.c	–	–	–	–	TSXDSY08R4D (5)	–	–	–
	24...120 VAC/1 A	–	–	–	–	–	–	–	TSXDSY16S4 (5)
	48...240 VAC/1 A	–	–	–	–	–	–	–	TSXDSY16S5
	48...240 VA/2 A	–	–	–	–	–	–	–	TSXDSY08S5
	24 VDC/24...240 VAC/3A	–	–	–	–	TSXDSY08R5 (5)	TSXDSY16R5 (5)	–	–

(1) Terminal block to be ordered separately

(2) For use with Advantys Telefast ABE7 wiring system



Type of module	Discrete I/O	
<b>Connection</b>	By HE 10 connector (2) high density	
<b>Number of inputs</b>	16 high-speed	
<b>Number of protected outputs</b>	12 solid state	12 reflex or timed
<b>Output voltage/current</b>	24 VDC/0.5 A	TSXDMY28FK (5) TSXDMY28RFK (5)

(2) For use with Advantys Telefast ABE7 wiring system

(5) For coated version add C at the end of the reference: example TSXDEY08D2 becomes TSXDEY08D2C

**Connection accessories:** See [www.schneider-electric.com](http://www.schneider-electric.com)

## Analog I/O modules



Type of module	Analog input					
	High level with common point			High level isolated		Low level isolated
<b>Connection</b>	By 25-way SUB-D connector					
<b>Number of channels</b>	4 high-speed	8	16	8	16	4
<b>Resolution</b>	16 bits	12 bits		16 bits	16 bits	16 bits
<b>Isolation</b>	Between channels	Common point	Common point	Common point	± 200 VDC	± 100 VDC
	Between channels and earth	~ 1000 Vrms	~ 1000 Vrms	~ 1000 Vrms	~ 1000 Vrms	~ 1780 Vrms
<b>Reference</b>	High level input (2)	TSXAEY420 (7)	TSXAEY800 (7)	TSYAEY1600 (7)	TSXAEY810 (7)	—
	Multi-range	—	—	—	—	TSXAEY1614 (3)(7) TSXAEY414 (4)(7)

(1) Screw terminals **TSXBLY01** to be ordered separately

(2) ± 10 V, 0...10 V, 0...5 V, 1...5 V, 0...20 mA, 4...20 mA

(3) ± 63 mV thermocouple (B, E, J, K, L, N, R, S, T, U)

(4) ± 10 V, ± 5 V, 0...10 V, 0...5 V, 1...5 V, 0...20 mA, 4...20 mA, -13...+63 mV, 0...400 W, 0...3850 W, thermal probe, thermocouple



Type of module	Analog output		With common point
	Isolated	With common point	
<b>Connection</b>	By screw terminals TSXBLY01 (5)	By 25-way SUB-D connector	
<b>Number of channels</b>	4	8	
<b>Resolution</b>	11 bits + sign	13 bits + sign	
<b>Isolation</b>	Between channels	Common point	
	~ 1500 Vrms		
<b>Reference</b>	Input signal (6)	TSXASY410 (7)	TSXASY800 (7)

(5) Terminal block to be ordered separately

(6) ± 10 V, 0...10 V, 0...20 mA, 4...20 mA

(7) For coated version add C at the end of the reference: example **TSXAEY420** becomes **TSXAEY420C**



Type of module	Counter		Counter/measurement	Electronic cam
Type of inputs for Counting	Sensors (2) Incremental encoders (3)		Sensors (2) Encoders (3)(4)	Incremental encoders (3) Absolute encoders (5)
Cycle time module	40 kHz		500 kHz/200 kHz (5)	
Number of channels	5 ms	10 ms	1 ms	–
Number of axes	2	4	2	128 cams
Reference	TSXCTY2A (1)	TSXCTY4A (1)	TSXCTY2C (1)	TSXCCY1128 (1)

(1) For coated version add **C** at the end of the reference: example TSXCTY2A becomes TSXCTY2AC

(2) For 2/3-wire PNP/NPN 24 VDC sensors

(3) For 5 VDC RS422, 10...30 VDC Totem Pole incremental encoders

(4) For SSI serial or parallel output absolute encoders

(5) For RS485 serial or parallel output absolute encoders

## Motion control modules



Module type	For translators (amplifier for stepper motor)	For analog control servomotors (for asynchronous and brushless motors)			
Control outputs	RS 422	+/- 10 V			
Compatible with drives	Lexium 05, Twin Line	Lexium 05 / 15 LP, MP and HP, Twin Line			
Functions	Linear axes	Limited	Limited or infinite	Limited or infinite	Limited or infinite(6)
	Slave axes	–	With static ratio	With dynamic ratio	–
Frequency for each axis	187 kHz	500 kHz with incremental encoder, 200 kHz with absolute encoder (7)			
Number of axes	1	2	2	4	2
Reference	TSXCFY11 (1)	TSXCFY21 (1)	TSXCAY21 (1)	TSXCAY41 (1)	TSXCAY22 (1)
			TSXCAY42 (1)	TSXCAY33 (1)	

(6) With linear interpolation on 2 or 3 axes

(7) SSI serial or with parallel outputs



Module type	Servomotors with SERCOS® digital ring (for brushless motors)		
Control outputs	SERCOS® network ring		
Compatible with ranges	Lexium 15 LP, MP and HP		
Functions	Linear or infinite independent axes, slave axes with cam profile or ratio		
Processing	4 sets of axes with linear interpolation from 2 to 8 axes	4 sets of axes with linear and circular interpolation from 2 to 3 axes (8)	4 sets of axes with linear interpolation from 2 to 8 axes
Frequency for each axis	4 MB SERCOS® network ring		
Number of axes	8 (9)	8 (9)	16 (10)
Reference	TSXCSY84	TSXCSY85	TSXCSY164

(8) TSXCSY85 module supplied with TJE trajectory editor: linear trajectories with links between segments according to polynomial or circular interpolation and circular trajectories.

(9) 8 real axes, 4 imaginary axes and 4 remote axes

(10) 16 axes (real axes, imaginary and remote axes)

## Weighing modules



Type of module	ISP Plus supplied uncalibrated	supplied calibrated and  offer
Load cell inputs / outputs	50 measurements (for 1 to 8 load cells) / 2 discrete and 1 RS 485 for display unit	
Reference	Without display unit TSXISPY101 (1) With display unit TSXXBTN410 TSXISPY121	Please consult your Schneider-electric agency Please consult your Schneider-electric agency

Connection accessories: See [www.schneider-electric.com](http://www.schneider-electric.com)

## Communication modules

Transparent  
Ready



Type of module		Ethernet TCP/IP				
<b>Speed</b>		10 MBps				
<b>Standard services</b>		Ethway, TCP/IP (Uni-TE, Modbus)				
<b>Transparent Ready</b>	Classe	C10	B30	B30	C30	D10
	Global Data	–	Yes	Yes	Yes	–
	I/O Scanning	–	Yes	Yes	Yes	–
	TCP Open	Yes	–	–	Yes	–
<b>Web server</b>	Standard services	Yes	Yes	Yes	Yes	Yes
	FactoryCast services	Yes	–	–	Yes	–
	FactoryCast HMI services	–	–	–	–	Yes
<b>Reference</b>		TSXETY110WS (4)	TSXP57 (1)	TSXETY4103 (4)	TSXETY5103 (4)	TSXWMY100 (4)

(1) References: see pages 3/18 and 3/19, Premium processors with integrated Ethernet TCP/IP port



Type of module		AS-Interface cabling system	CANopen machine bus	Fipio manager fieldbus	INTERBus fieldbus	Profibus DP fieldbus
<b>Name and description</b>		In-rack	PCMCIA	Integrated port	In-rack	In-rack
<b>Speed</b>		167 kBps	20 K...1 MBps	1 MBps	0.5 MBps	9.6 K...12 MBps
<b>Reference</b>		TSXSAY1000 (4)	TSXCPP110 (4)	TSXP57 (2)	TSXIBY100 (4)	TSXPBY100

(2) References: see pages 3/18 and 3/19, Premium processors with integrated Fipio port



Type of module		Serial links			Modbus		ASCII
		Uni-Telway			Modbus		
<b>Name and description</b>		Integrated port	In-rack	PCMCIA	In-rack	PCMCIA	PCMCIA
<b>Speed</b>		19.2 kBps	19.2 kBps	1.2...19.2 kBps	19.2 kBps	1.2...19.2 kBps	1.2...19.2 kBps
<b>Reference</b>	With interface	RS 485	TSXP57 (1)	TSXSCY21601 (2) (4)	TSXSCP114 (4)	TSXSCY11601 (4)	TSXSCP114 (4)
		RS 232D	–	–	TSXSCP111 (4)	–	TSXSCP111 (4)
		20mA CL	–	–	TSXSCP112 (4)	–	TSXSCP112 (4)

(1) References: see pages 3/18 and 3/19, Premium processors with integrated Ethernet TCP/IP port

(2) Also designed for Modbus serial (channel 0).



Type of module		Other networks		
		Modbus Plus	Fipway	Fipio (agent function)
<b>Name and description</b>		PCMCIA card	PCMCIA card	PCMCIA card
<b>Speed</b>		1 MBps	1 MBps	1 MBps
<b>Reference</b>		TSXMBP100 (4)	TSXFPP20 (4)	TSXFPP10 (4)

(4) For coated version add C at the end of the reference: example TSXETY110WS becomes TSXETY110WSC

**Connection accessories:** See [www.schneider-electric.com](http://www.schneider-electric.com)



Type of processor	Simple applications	Simple and medium complexity applications
Max. number of discrete I/O (1)	Local	Unlimited (27 slots max.)
	Remote/distributed	31744 inputs (RIO)/8000 inputs (DIO) and 31744 outputs (RIO)/8000 outputs (DIO)
Max. number of analog I/O (1)	Local	Unlimited (27 slots max.)
	Remote/distributed	1984 inputs (RIO)/500 inputs (DIO) and 1984 outputs (RIO)/500 outputs (DIO)
Type of application-specific I/O	Intrinsically safe I/O, counter, motion control, high-speed interrupt inputs, time-stamp, serial link, AS-Interface sensor/actuator bus	
Communication ports (2)	Integrated Modbus	2 RS 232/RS 485
	Modbus Plus	1 integrated, 2 in local rack
	Ethernet TCP/IP	2 in local rack
	Fieldbus	Profibus DP: 2 in local rack
Memory capacity	Integrated	2 MB
	With PCMCIA extension	—
	Data storage	—
Reference	140CPU31110 (4)	140CPU43412U (4)

## Processors under Concept/ProWORX software



Type of processor	Simple applications	
Max. number of discrete I/O (1)	Local	1024 (27 slots max.)
	Decentralized/distributed	31744 inputs (RIO)/8000 inputs (DIO) and 31744 outputs (RIO)/8000 outputs (DIO)
Max. number of analog I/O (1)	Local	Unlimited (27 slots max.)
	Decentralized/distributed	1984 inputs (RIO)/500 inputs (DIO) and 1984 outputs (RIO)/500 outputs (DIO)
Type of application-specific I/O	Intrinsically safe I/O, counter, motion control, high-speed interrupt inputs, time-stamp, serial link, AS-Interface sensor/actuator bus	
Communication ports (2)	Integrated Modbus	1 RS 232
	Modbus Plus	1 integrated, 2 in local rack
	Ethernet TCP/IP	2 in local rack
	Fieldbus	INTERBUS/Profibus DP: 2 in local rack
Memory capacity	Integrated	256 Kb
Reference	Concept/ProWORX	140CPU11302 (4)
		512 Kb
		140CPU11303 (4)

(1) The maximum values for the number of discrete or analog I/O are not cumulative

(2) The numbers of communication modules are not cumulative, 2 or 6 in local rack, depending on model

(3) Processor compatible with Unity Pro software after updating its firmware (via OS-Loader included in Unity Pro)

(4) For coated version add C at the end of the reference: example **T140CPU31110** becomes **140CPU31110C**



	Complex applications		Hot Standby redundant applications	
	Unlimited (26 slots max.)	Unlimited (13 slots max.)	Unlimited (26 slots max.)	Unlimited (13 slots max.)
	31744 inputs (RIO)/8000 inputs (DIO) and 31744 outputs (RIO)/8000 outputs (DIO)	31744 inputs and 31744 outputs	31744 inputs (RIO)/8000 inputs (DIO) and 31744 outputs (RIO)/8000 outputs (DIO)	31744 inputs and 31744 outputs
	Unlimited (27 slots max.)	Unlimited (13 slots max.)	Unlimited (27 slots max.)	Unlimited (13 slots max.)
	1984 inputs (RIO)/500 inputs (DIO) and 1984 outputs (RIO)/500 outputs (DIO)	1984 inputs and 1984 outputs	1984 inputs (RIO)/500 inputs (DIO) and 1984 outputs (RIO)/500 outputs (DIO)	1984 inputs and 1984 outputs
	Intrinsically safe I/O, counter, motion control, high-speed interrupt inputs, time-stamp, serial link, AS-Interface sensor/actuator bus	–	–	–
	1 RS 232/485	1 RS 232/485	1 RS 232/485	1 RS 232/485
	1 integrated, 6 in local rack	1 integrated	1 integrated, 6 in local rack	1 integrated
	1 integrated, 6 in local rack	1 integrated, 6 in local rack	6 in local rack	1 integrated, 6 in local rack
	Profinet DP: 6 in local rack	–	Profinet DP: 6 in local rack	–
	2 MB	4 MB	2 MB	2 MB
	7 MB		7 MB	7 MB
	8 MB		8 MB	–
	140CPU65150 (4)	140CPU65160 (4)	140CPU65260 (4)	140CPU65160S
				140CPU67160 (4)
				140CPU67160S



	Simple and medium complexity applications	Complex applications
	1024 (27 slots max.)	
	31744 inputs (RIO)/8000 inputs (DIO) and 31744 outputs (RIO)/8000 outputs (DIO)	
	Unlimited (27 slots max.)	
	1984 inputs (RIO)/500 inputs (DIO) and 1984 outputs (RIO)/500 outputs (DIO)	
	Intrinsically safe I/O, counter, motion control, high-speed interrupt inputs, time-stamp, serial link, AS-Interface sensor/actuator bus	
	2 RS 232	
	1 integrated, 6 in local rack	
	6 in local rack	
	INTERBus/Profinet DP: 6 in local rack	
	2 MB	4 MB
	140CPU43412A (3) (4)	140CPU53414B (3) (4)



Type of power supply module for		Quantum				
<b>Input voltage</b>		24 VDC	48...60 VDC	100...150 VDC	120...230 VAC	115/230 VAC
<b>Output current</b>		8 A/3 A (5)	8 A	8 A/3 A	8 A/3 A (1)	11 A
<b>Reference</b>	<b>Type</b>	Standalone (2)	<b>140CPS21100 (6)</b>	–	<b>140CPS51100 (6)</b>	<b>140CPS11100 (6)</b>
		Summable	<b>140CPS21400 (6)</b>	<b>140CPS41400 (6)</b>	–	–
		Redundant	<b>140CPS22400 (6)</b>	<b>140CPS42400 (6)</b>	<b>140CPS52400 (6)</b>	<b>140CPS12400 (6)</b>

(1) Process power supplies see chapter 6 "Power supply"

(2) The output current for the standalone power supply modules is 3 A

## PCMCIA memory extensions



Type of PCMCIA card for Unity processors 140CPU65/67	Application		Additional data
<b>Technology</b>	SRAM	Flash EPROM	SRAM
<b>Memory size</b>	512 Kb/512 Kb (4)	–	<b>TSXMCPC512K (3)</b>
	1 MB (5)	<b>TSXMRPC001M (6)</b>	<b>TSXMFPP001M</b>
	2 MB (5)	<b>TSXMRPC002M</b>	<b>TSXMFPP002M</b>
	2 MB/1 MB (4)	–	<b>TSXMCPC002M</b>
	3 MB (5)	<b>TSXMRPC003M (6)</b>	–
	4 MB	–	<b>TSXMFPP004M</b>
	7 MB (5)	<b>TSXMRPC007M (6)</b>	–
	8 MB	–	<b>TSXMFPP008M</b>

(3) These cards have an additional SRAM area for storing data (recipes, production data).

(4) The 1<sup>st</sup> value corresponds to the size of the application area, the second to the size of the additional data area for storing data (recipes, production data, etc)

(5) By configuration the user can reserve part of the memory space for data storage (recipes, production data, etc)

(6) For coated version add C at the end of the reference: example **TSXMRPC001M** becomes **TSXMRPC001MC**

## Racks



Type	Racks	
Dimensions WxDxH		
References	2 slots	104x104x290 mm
	3 slots	143x104x290 mm
	4 slots	184x104x290 mm
	6 slots	265x104x290 mm
	10 slots	428x104x290 mm
	16 slots	671x104x290 mm
	Rack extension module	<b>140XBE10000</b> (2)

(1) Local extension module, to be placed in main rack and secondary rack.

(2) For coated version add C at the end of the reference: example **140XBP00200** becomes **140XBP00200C**

## Connection accessories <sup>(3)</sup>

Type	Cable for extension racks (main and secondary)	
References	L = 1 m	<b>140XCA71703</b>
	L = 2 m	<b>140XCA71706</b>
	L = 3 m	<b>140XCA71709</b>

(3) Other accessories: See [www.schneider-electric.com](http://www.schneider-electric.com)



Type of module (4)	Discrete inputs					
<b>Connection</b>	By screw terminals 140XTS00200 (to be ordered separately)					
<b>Number of isolated channels</b>						
16	4 groups of 8	3 groups of 8	2 groups of 8	6 groups of 16	8 groups of 2	—
24 VDC	—	140DDI15310	—	—	140DDI36400	—
10...60 VDC	—	140DDI85300	—	—	—	140DDI84100
20...30 VDC	—	140DSI35300(1)	—	—	—	—
125 VDC	—	—	140DDI67300	—	—	—
24 VAC	140DAI34000	140DAI35300	—	—	—	—
48 VAC	140DAI44000	140DAI45300	—	—	—	—
115 VAC	140DAI54000	140DAI55300	—	140DAI54300	—	—
230 VAC	140DAI74000	140DAI75300	—	—	—	—

(1) For negative logic, replace 00 at the end of the reference with 10, for example 140DDI35300 becomes 140DDI35310.



Type of module (4)	Discrete outputs					
	Solid state					
<b>Connection</b>	By screw terminals 140XTS00200 (to be ordered separately)					
<b>Number of protected channels</b>	16	4 groups of 8	4 groups of 4	2 groups of 8	6 groups of 16	2 groups of 6
<b>Output voltage/current</b>	5 VDC TTL/0.075 A (2)	—	140DDO15310	—	—	—
	24 VDC/0.5 A	—	140DDO35301(1)	—	—	—
	10...30 VDC/0.5 A (3)	—	140DVO85300	—	—	—
	19.2...30 VDC/0.5 A	—	—	—	140DDO36400	—
	10...60 VDC/2 A	—	—	140DDO84300	—	—
	24...125 VDC/0.75 A	—	—	—	—	140DDO88500
	24...48 VAC/4 A	—	—	140DAO84220	—	—
	24...115 VAC/4 A	140DAO84010	—	—	—	—
	24...230 VAC/ 4-3 A	140DAO84000	140DAO85300	—	—	—
	100...230 VAC/4-3 A	—	—	140DAO84210	—	—

(1) For negative logic, replace 01 at the end of the reference with 10, for example 140DDO35301 becomes 140DDO35310.

(2) Negative logic

(3) Controlled outputs



Type of module (4)	Discrete I/O			Discrete outputs	
	Solid state			Relay	
<b>Connection</b>	By screw terminals 140XTS00200 (to be ordered separately)				
<b>Number of I/O</b>	2 groups of 8/2 groups of 4		1 group of 4/ 4 isolated	—/16 NO	—/8 NO/NC
<b>Input voltage</b>	24 VDC	125 VAC	125 VDC	—	—
<b>Output voltage/current</b>	30 VDC/15 A	125 VAC/4 A	125 VDC/4 A	150 VDC or 250 VAC/2 A	150 VDC or 250 VAC/5 A
<b>Reference</b>	140DDM39000	140DAM59000	140DDM69000	140DRA84000	140DRC83000

(4) For coated version add C at the end of the reference: example 140DDI15310 becomes 140DDI15310 C

**Connection accessories:** See [www.schneider-electric.com](http://www.schneider-electric.com)

## Analog I/O modules



Type of module (3)	Analog inputs				
Connection	By screw terminals 140XTS00200 (to be ordered separately)				
Number of channels	8	16	8		
Input signal	4...20 mA 1...5 V	0...25/20 mA 4...20 mA	(1)	Thermal probe Pt, Ni	Thermocouple (2)
Resolution	12 bits	0...25000 points	16 bits	12 bits + sign	16 bits
Reference	140ACI03000	140ACI04000	140AVI03000	140ARI03010	140ATI03000

(1) 0...25 mA, ± 20 mA, 4...20 mA, 0...10 V, ± 10 V, 0...5 V, ± 5 V, 1...5 V.

(2) Type B, E, J, K, R, S, T, mV



Type of module (3)	Analog output		
Connection	By screw terminals 140XTS00200 (to be ordered separately)		
Number of channels	4	8	4
Input signal	4...20 mA	0...25/20 mA 4...20 mA	0...10 V, ± 10 V 0...5 V, ± 5 V
Resolution	12 bits	0...25000 points	12 bits
Reference	140ACO02000	140ACO13000	140AVO02000



Type of module (3)	Analogs I/O
Connection	By screw terminals 140XTS00200 (to be ordered separately)
Number of inputs	4
Number of outputs	2
Input signal	0...20 mA, ± 20 mA, 4...20 mA, 0...10 V, ± 10 V, 0...5 V, ± 5 V, 1...5 V.
Resolution	Inputs 16 bits, outputs 12 bits
Reference	140AMM09000

(3) For coated version add C at the end of the reference: example 140ACI03000 becomes 140ACI03000C

Connection accessories: See [www.schneider-electric.com](http://www.schneider-electric.com)



Type of module	I/O		Analog		
	Discrete				
Connection	By screw terminal 140XTS33200 (to be ordered separately)				
Number of inputs	8	—	8	—	—
Number of outputs	—	8	—	—	8
Input signal	—	—	Thermal probe	0...25/20 mA	
			Thermocouple (1)	4...25 mA	
Resolution	—	—	12 bits + sign	0...25000 points	15 bits
Reference	140DII33000	140DIO33000	140AII33000	140AII33010	140AIO33000

(1) Type J, K, E, T, S, R, B, mV

### Counter and special purpose modules



Type of module	High-speed counter		High-speed inputs with interrupt	Time-stamp system	
Type of inputs for	Incremental encoders		Discrete 24 VDC (2)	DCF 77 24 VDC (3)	Discrete 24...125 VDC
Counting frequency	100 kHz	500 kHz	—	—	—
Number of channels	5	2	16	1	32
Reference	140EHC10500	140EHC20200	140HLI34000	140DCF07700	140ERT85410 (4)

(2) 3 operating modes: Interrupt, latch, high-speed inputs, on rising or falling edge.

(3) For GPS or DCF time receiver

(4) one input complying with DCF77 standard

### Safety I/O modules



Type of modules	Analog	Discrete	
Connection	Screw terminal		
Number of inputs	8 analog inputs	16 discrete inputs	—
Number of outputs	—	—	16 discrete outputs
Input signal	4...20mA	24VDC	—
Output voltage	—	—	24VDC
Resolution	16 bits	—	—
Certification	Functional Safety SIL2, UL, CE, CSA, Haz-loc		
Reference	140SAI94000S	140SDI95300S	140SDO95300S

Connection accessories: See [www.schneider-electric.com](http://www.schneider-electric.com)

## Communication modules

Transparent  
Ready



Type of module		Ethernet TCP/IP network			
<b>Speed</b>		10/100 MBps			
<b>Standard services</b>		TCP/IP(Modbus)			
<b>Transparent Ready</b>	Class	B30	B30	C30	D10
	Global Data	Yes	Yes	Yes	–
	I/O Scanning	Yes	Yes	Yes	–
	FDR server	Yes	Yes	Yes	–
	SNMP protocol	Yes	Yes	Yes	Yes
<b>Web server</b>	Standard services	Yes	Yes	Yes	Yes
	FactoryCast services	–	–	Yes	Yes
	FactoryCast HMI services	–	–	–	Yes
<b>Reference</b>		140CPU651 (1)	140NOE77101	140NOE77111	140NWM10000

(1) References: see pages 3/26 and 3/27, Quantum processors with integrated Ethernet TCP/IP



Type of module	Modbus Plus network	AS-Interface cabling system	INTERBUS fieldbus	Profibus DP Master V1 fieldbus (2)
<b>Name and description</b>	Integrated link	In-rack	In-rack	In-rack
<b>Speed</b>	1 MBps	167 kBps	0,5 MBps	to 12 MBps
<b>Reference</b>	140CPU (3)	140EIA92100	140NOA62200	PTQ PDP MV1

(2) from your partner Prosoft, [www.prosoft-technology.com](http://www.prosoft-technology.com)

(3) References: see pages 3/26 and 3/27, Quantum processors with integrated Modbus Plus



Type of module	Serial link	
<b>Modbus</b>		ASCII
<b>Name and description</b>	Integrated link	In-rack
<b>Speed</b>	19.2 kBps	19.2 kBps
<b>Reference</b>	140CPU (4) (5)	140ESI06210

(4) References: see pages 3/26 and 3/27, Quantum processors with integrated Modbus

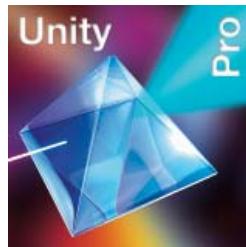
(5) RS 232/RS 485 on 140CPU651\*\* and 140CPU67160 processors and RS 232 on 140CPU31110, 140CPU43412A, 140CPU53414A processors.

To operate in a corrosive environment, Quantum modules can be ordered with a conformal coating applied to components of the product.

Conformal coating will extend its life and enhance its environmental performance capabilities.

To order conformal coating append a C to the standard catalog number. For example, 140CPS 11420 > 140CPS 114 20C

Connection accessories: See [www.schneider-electric.com](http://www.schneider-electric.com)



Software type		Unity Pro Small version 3.0			
License type version 3.0		Single (1 workstation)	Group (3 workstations)	Team (10 workstations)	Site (> 10 workstations)
References	Software pack	UNYSPUSFUCD30	UNYSPUSFGCD30	UNYSPUSFTCD30	–
	Update (1)	UNYSPUSZUCD30	UNYSPUSZGCD30	UNYSPUSZTCD30	–
Software type		Unity Pro Medium version 3.0			
License type version 3.0		Single (1 workstation)	Group (3 workstations)	Team (10 workstations)	Site (> 10 workstations)
References	Software pack	UNYSPUMFUCD30	UNYSPUMFGCD30	UNYSPUMFTCD30	–
	Update (2)	UNYSPUMZUCD30	UNYSPUMZGCD30	UNYSPUMZTCD30	–
Software type		Unity Pro Large version 3.0			
License type version 3.0		Single (1 workstation)	Group (3 workstations)	Team (10 workstations)	Site (> 10 workstations)
References	Software pack	UNYSPULFUCD30	UNYSPULFGCD30	UNYSPULFTCD30	UNYSPULFFCD30
	Update (3)	UNYSPULZUCD30	UNYSPULZGCD30	UNYSPULZTCD30	UNYSPULZFC30
Software type		Unity Pro Extra Large version 3.0			
License type version 3.0		Single (1 workstation)	Group (3 workstations)	Team (10 workstations)	Site (> 10 workstations)
References	Software pack	UNYSPUEFUCD30	UNYSPUEFGCD30	UNYSPUEFTCD30	UNYSPUEFFCD30
	Update (4)	UNYSPUEZUCD30	UNYSPUEZGCD30	UNYSPUEZTCD30	UNYSPUEZFC30

(1) From Concept S, PL7 Micro, ProWORX NxT Lite and ProWORX 32 Lite

(2) From Concept S/M, PL7 M/J, ProWORX NxT Lite and ProWORX 32 Lite

(3) From Concept S / M, PL7 M/J/P, ProWORX NxT Lite and ProWORX 32 Lite

(4) From all models Concept, PL7, ProWORX NxT and ProWORX 32

Unity Pro is common programming software for debugging and operation of Modicon M340, Premium, Quantum and Atrium programmable controller ranges. Unity Pro takes the recognized usage values of PL7 and Concept software and offers a complete set of new functions for improved productivity and opening to other software.

Five IEC61131-3 languages are supported as standard in Unity Pro with all debugging functions, either on the simulator or directly online with the programmable controller.

Thanks to symbolic variables independent of memory, structured data and user function blocks, application objects are a direct reflection of the automated process application components.

Unity Pro operator screens are user-configured in the application from graphic libraries. Operator accesses are simple and direct.

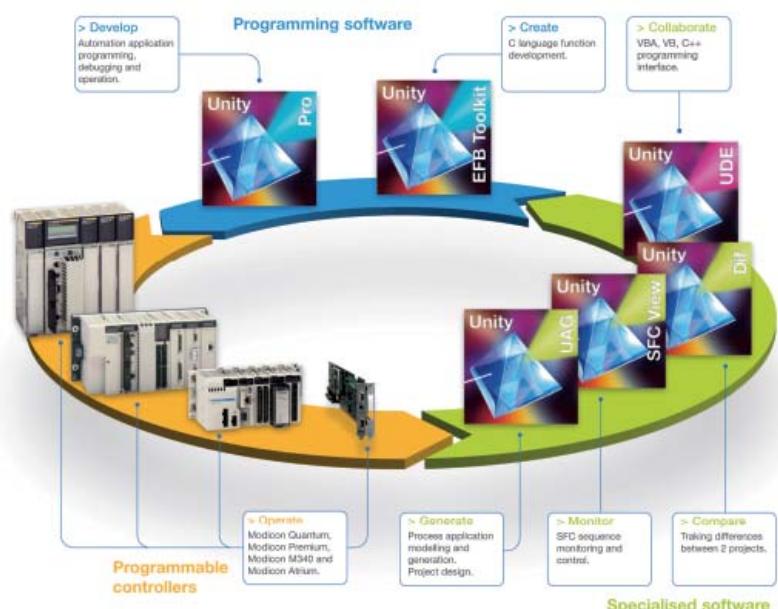
Unity V 3.0 integrates the PLCopen standard MFB (Motion Function Block) library, simplifying installation of motion controllers on CANopen machine buses: Altivar 31, Altivar 71, Lexium 05, Lexium 15 LP, MP and HP, IcIA.

Debugging and maintenance are simplified by animated graphic objects. For diagnostics, a window clearly and chronologically displays all system and application faults with timestamping at source.

The fault cause search navigation function enables precise location of the source of missing conditions.

XML format, the Web standard for data exchange, has been adopted as Unity application source format. By simple import/export, all or part of the application can be exchanged with other project software.

Finally, the converters integrated in Unity Pro automatically convert PL7 and Concept IEC 61131-3 standards and applications.



# Unity software

## Specialized software

### Integrator system dedicated software

Software type		Unity Pro XL Alliance V3.0	
License type version 3.0		Single (1 workstation)	Team (10 workstations)
References	Software pack	<b>UNYSPUEFUL30</b>	<b>UNYSPUEFTAL30</b>
	Old generation upgrade (1)	<b>UNYSPUEZUAL30</b>	<b>UNYSPUSZTCD30</b>
	Unity update	<b>UNYSPUQZUAL30</b>	<b>UNYSPUQZTAL30</b>
Software type		PLC Suite Alliance V3.0	
License type version 3.0		Single (1 workstation)	Team (10 workstations)
References	Pack (1)	<b>UNYSPUQFUAL30</b>	<b>UNYSPUQFTAL30</b>

(1) Including Unity Pro XL Alliance, Concept, PL7, ProWORX



### Unity Pro application comparison software

Software type		Unity Dif
License type version 2.0		Single (1 workstation), French and English languages (software and documentation)
Reference	Software extension (1)	<b>UNY SDU DFU CD20</b>

(1) Requires version Unity Pro XL >/ V2.1



### PLC application and Modicon M340 embedded software update

Software type		Unity Loader
License type version 1.0		Single (1 workstation)
Reference	Software pack (1)	<b>UNY SMU ZUCD10</b>

(1) This software is also included in all Unity Pro software packs



### SFC View application diagnostic and monitoring software

Software type		Unity SFC View	
License type version 2.0		Single (1 workstation)	Team (10 workstations)
References	Software pack	<b>UNYSDUMFUCD20</b>	<b>UNYSDUMFTCD20</b>



### EF/EFB function development software in C language

Software type		Unity EFB Toolkit
License type version 3.0		Single (1 workstation), English language (software and documentation)
References	Software pack	<b>UNYSPUZFUCD30E</b>
	Renewal	<b>UNYCSPSPUZBU</b>



### Batch/process application design and generation software

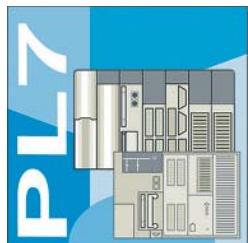
Software type		Unity UAG (Unity Application Generator)		
License type version 2.3		Single (1 workstation)	Team (> 10 workstations)	Site (> 10 workstations)
References	Software pack	<b>UAGSEWLFCUD23</b>	<b>UAGSEWLFTCD23 (1)</b>	<b>UAGSEWLFFCD23</b>

(1) Also includes Unity Pro XL Group (3 workstations) and Concept XL Group (3 workstations)



### Specific Unity Pro solution design software pack

Software type		Unity UDE (Unity Developer's Edition)
License type		Single (1 workstation), English language (software and documentation)
Reference	Software pack	<b>UNYUDEVFUCD21E</b>



PL7 is the common programming, debugging and operating software for the TSX Micro and Premium ranges of PLCs as well as Atrium coprocessors (see pages 3/12, 3/18 and 3/26).

PL7 offers 4 IEC languages: Instruction List (IL), Ladder Diagram (LD), Structured Text (ST) and Sequential Function Chart (SFC). You can use the most suitable language for each function in your application, making use of the multi-tasking structure of the processors.

For using application-specific functions, PL7 directly integrates the application-specific screens required for configuration and adjustment as well as supervisory and diagnostics activities.

Type of software		PL7 Micro for TSX Micro platform			
Type of license version 4.5		Single (1 station)	Single with SyCon V2.8	Group (3 stations)	Open Team (10 stations)
Reference	Software package	TLXCDPL7MP45	TLXCDPL7MPC45	TLXCD3PL7MP45	TLXOTPL7MP45M
	Update (1)	TLXRCDP7MP45M	TLXRCDP7MPC45M	TLXRC3PL7MP45M	–
PL7 Junior for TSX Micro/Premium and Atrium coprocessor platforms					
Type of license version 4.5		Single (1 station)	Group (3 stations)		
Reference	Software package	TLXCDPL7JP45	TLXCD3PL7JP45		
	Update (1)	TLXRCDP7JP45M	TLXRC3PL7JP45M		
	Upgrade (2)	TLXUCDP7JP45M	TLXUCD3PL7JP45M		
PL7 Pro for TSX Micro/Premium and Atrium coprocessor platforms					
Type of license version 4.5		Single (1 station)	Group (3 stations)	Open Team (10 stations)	Open Site
Reference	Software package	TLXCDPL7PP45	TLXCD3PL7PP45	TLXOTPL7PP45M	TLXOSPL7PP45M
	Update (1)	TLXRCDP7PP45M	TLXRC3PL7PP45M	–	–
	Upgrade (2)	TLXUCDP7PP45M	TLXUCD3PL7PP45M	–	–

(1) From the previous software version.

(2) From lower level, earlier version software.

## Specialist tools

### EF function development software in C language

Type of software		PL7 SDKC for EF function development software in C language	
PL7 SDKC software extension		For PL7 Micro/Junior/Pro	
Reference		TLXLSDKCPL741M	

### Development of applications in C language

Type of software		PL7 FUZ for processing process applications using fuzzy logic	
PL7 FUZ software extension		For PL7 Micro/Junior/Pro, TSX Micro/Premium	
Reference		TLXLPL7FUZ34M	

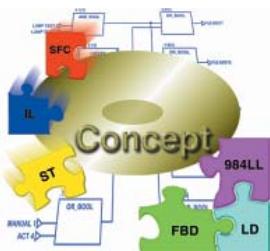
### Comparison of PL7 applications

Type of software		PL7 DIF for comparison of applications	
PL7 DIF software extension		For PL7 Pro, TSX Micro/Premium	
Type of license		Single (1 station)	Site (> 10 stations)
Reference		TLXCDPL7DIF42	TLXOSPL7DIF42

### Availability of control systems based on Premium platforms

Type of software		Warm Standby redundant	
Warm Standby software extension		For PL7 Junior/Pro	
Type of license		Single (1 station)	
Reference		TLXCDWSBYP40F / E	

# Programming software For Modicon Quantum, Momentum



**Concept** is the IEC programming software for the Momentum and Quantum range of PLCs. It provides advanced Microsoft Windows based tools that deliver a multi-language development environment for control system programming.

Uses familiar, standardized editors, bundled in a single application to create and integrate PLC control, communication and diagnostic logic.

Five IEC editors give users the freedom to choose the programming language that fits their application requirements: Function Block Diagram (FBD), Ladder Diagram (LD), Sequential Function Chart (SFC), Structured Text (ST) and Instruction List (IL).

Type of software	Concept for Quantum/Momentum platforms			
Type of license version 2.6	Single (1 station)	Group (3 stations)	10 users (10 stations)	Site
Software references	Concept S	372SPU47101V26	–	–
	Concept M	372SPU47201V26	–	–
	Concept XL	372SPU47401V26	372SPU47411V26	372SPU47421V26
Update references	Concept S (3)	372ESS47101	–	–
	Concept M (3)	372ESS47201	–	–
	Concept XL (3)	372ESS47401	372ESS47403	372ISS4740310

(3) From an earlier software version.

## Specialist tools

EF/EFB function development software in C language

Type of software	Concept EFB Toolkit	
Type of license	Version 2.6	Upgrade version 2.6
Reference	Software package	372SPU47001V26

## Concept service version limited to application loading

Type of software	Concept Application Loader	
Type of license	Version 2.6	
Reference	Software package	372SPU47701V26

## Software for designing and generating batch/process applications

Type of software	Unity UAG (Unity Application Generator)	
Type of license version 3.0	Single (1 station)	Site
Reference	Medium Software package	UAGSEWMFUCD22
	Large Software package	UAGSEWLFCUD22

## SFC View application diagnostic and monitoring software

Type of software	Concept SFC View		
Type of license version 3.0	Single (1 station)	Group (10 stations)	Site (100 stations)
Reference	372SFV16000V30	372SFV16020V30	372SFV16030V30

## ProWORX for Modicon Quantum, Momentum

ProWORX 32 is the flexible, easy-to-use cross-platform LL984-programming software for Modicon range PLCs. It gives you the power to program your Modicon controllers online or offline, manage your I/O subsystems, and analyze your plant's activity in real-time, all in a familiar Windows environment.

ProWORX 32 provides client/server capabilities to organize user-groups and -rights, store projects at a central location and realize office-plant floor bridging.

The project emulator provides the ability to test projects prior to running them in the PLC run-time environment to ensure your system will run at peak efficiency.

Type of software	ProWORX for Quantum/Momentum platforms			
Type of license version 2.1	Single (1 station)	Group (3 stations)	Multi-user (10 stations)	Site
Software references	ProWORX 32 Server	372SPU78001PSEV	–	–
	ProWORX 32 Suite	372SPU78001PSSV	–	–
	ProWORX 32 Client, Full Dev.	372SPU78001PDEV	372SPU78001PSTH	372SPU78001PSTE
	ProWORX 32 Online	372SPU78101PONL	–	–
	ProWORX 32 Lite	372SPU71001PLDV	372SPU71001PLTH	372SPU71001PLTE
Upgrade to ProWORX 32 references (4)	372SPU78401LPUP	372SPU78401LPTH	372SPU78401LPTE	–

(4) Only possible for customers, who are "up-to-date" with CSP (continuing support program)

**Schneider Electric Industries SAS**

Head office  
89, bd Franklin Roosevelt  
92506 Rueil-Malmaison Cedex  
France

[www.schneider-electric.com](http://www.schneider-electric.com)

Owing to changes in standards and equipment, the characteristics given in the text and images in this document are not binding until they have been confirmed with us.  
Design: IGS-CP  
Photos: Schneider Electric - Image bank  
Print: Ingoprint